# The Builder.

No. CLXXXIII.

*SATURDAY, MAY* 30, 1846.


IF those persons who are now clamouring loudly, against the contemplated injury to the Triumphal Arch at Hyde Park Corner, had spoken out long ago, when we first drew attention to the error about to be committed, it might have been prevented with less difficulty than now. At that time our contemporaries made no response. Every one felt that the intention was preposterous, but no one but ourselves thought it worth while to say so. Now that the scaffolding is up, the brickwork required in the upper part of the archway to carry the proposed pedestal is commenced, and all the arrangements completed, pens are set busily to work, and our arguments in objection are re-produced on all sides.

Coincident with the publication of our last number, containing further strictures on the subject, reports appeared in the daily papers of a conversation in the House of Commons to the same effect.

Lord R. Grosvenor said, the public some time ago found, that a quantity of scaffolding was erected about the arch at the top of Constitution-hill, and they were informed that it was intended for the elevation of an enormous equestrian statue of the illustrious duke, which was very much too large for the place on which it was about to be placed. Very great objections to this had been made, and on inquiry he had been told that the arch was found to be not strong enough to bear the statue, and that an outlay would be necessary to render it so. That being the case, he and the public had been delighted to hear that the plan of placing the statue on the arch had been put a stop to. Since then, however, it had again been resolved, he believed, to place the statue there. His question, and what the public wished to know, was, whether that part of the town was to be defaced by placing this statue in that situation?

Sir R. Peel said, some time ago subscriptions had been proposed to be made for erecting an equestrian statue to the noble duke, and a committee had been appointed by the subscribers to direct the application of the fund. But before the subscriptions were raised, a communication had been made to his late Majesty King William IV., who had been requested to state whether, in the event of the proposed subscriptions being raised for a magnificent equestrian statue to the Duke of Wellington, his Majesty would give his consent to its being placed on the arch at the top of Constitution-hill. Subsequently, a similar request had been made to her present Majesty, and he believed that Lord Melbourne, who was then Prime Minister, had been authorized to communicate to the committee, that her Majesty would confirm the intention of her Royal predecessor. Therefore the subscriptions had been raised after two successive sovereigns had declared, that they had no objection to the proposed site of the statue. He would not give any opinion on the question. The noble lord was of opinion that the statue, if placed as proposed, would disfigure the neighbourhood. The subscribers, on the contrary, thought it would be a very great ornament to the neighbourhood. (A laugh.) In fact, they ought to have withheld their subscriptions if they disapproved the site on which it was proposed to place the statue. *He had felt disposed to think that a better site might be chosen.* However, there was great difference of opinion as to the best mode of placing the statue. Then the architect's opinion as to the strength of the arch was to be considered, and on the matter being brought before him (Sir R. Peel), he had proposed, on the part of the Crown, to give almost any other site that might be agreed upon. The statue might be placed either between the Athenæum and the United Service Clubhouses, or in the immediate neighbourhood of the Duke of Wellington's residence, or near the Horse Guards. He had also undertaken, on the part of the Government, to propose to Parliament to vote a sum for the erection of a suitable pedestal (cheers), and that, on the whole, he had thought would have been the more satisfactory mode of settling the matter; but the committee, having again considered the subject, thought, that the consent of her Majesty having been formally signified to them, and considering that many of the subscribers had subscribed with the idea that the site originally fixed upon would not be departed from, it was doubtful whether they had the right to make any alteration in the site, and therefore it was determined by the committee that the site should not be altered.

Mr. Baillie observed, that it was generally reported that the statue was too large for the arch, and that it was consequently to be placed lengthways to the arch (a laugh), so as to look east and west, or at right angles to the road; and what he wished to suggest was, that at all events the statue should be placed properly on the arch.

Sir R. Peel thought, that though there might be better taste, there was something insidious in the suggestion; for if the statue were placed as the hon. member suggested, it might not be very convenient for those who passed under. (A laugh). The statue must be placed longitudinally with respect to the arch, if it were placed there at all.

Not a single member was there who would open his lips in defence of the proposed site, although Sir Frederick Trench was present, on whom the responsibility seems to rest: all agreed that the premier's offer of another site and a fitting pedestal should be accepted, and yet, in the face of this unanimous objection, an enormity is to be perpetuated which will long remain a disgrace to the metropolis, and the laughing-stock of foreigners.

Since then Sir Frederick Trench has published a letter in the *Times*, to correct certain inaccuracies in the speech of Lord Robert Grosvenor, but quite fails to touch the main point. "As to the objections to the position," says Sir Frederick, "they must have been very limited, or they would have reached the committee before the year 1845. And as to the question of taste, many of the most competent judges maintain that the position is most suitable; and that the effect will be supremely magnificent, when the outline of this beautiful colossal statue stands in bold relief, backed by an azure or a glowing sky, and I verily believe that they are at least as numerous and as competent to form a correct judgment in matters of taste, as those who are so strongly opposed to placing the statue in this position.

As for myself, with the utmost sincerity I disclaim any pretensions to be ranked in the former class, though I admire and acquiesce in their opinion.

I remember making an application to Sir Herbert Taylor, to ascertain whether his late Majesty entertained the objection which had been suggested to the committee, 'That there was no precedent for an equestrian statue of a subject in such a position;' and Sir Herbert Taylor's answer was, 'that his Majesty had no objection to the position, and that if a precedent was necessary he was ready to make one.'"

A very easy way of getting out of the difficulty. Propriety and fitness however, depend on something more than kingly will. *Le Roi le veut*, will not turn ugliness into beauty; or prevent the sneers of posterity.

Even the *Literary Gazette* who has from the commencement, watched over and kindly petted the project, and who blew the first trumpet to announce the completion of the statue, feels compelled now to admit, that "though the arch may probably be the most distinguished position in London (too fixed, we *fear*, to be changed), we have always been of opinion that a pedestal peculiar to itself, in a very public and commanding site, would be preferable."

We have received several letters on the subject, but have room only for one, the shortest:—

MR. EDITOR,—A few weeks since you indulged your lively vein in your leading article, giving the public to understand you could enjoy a joke as well as the rest of the world. Now I cannot see why you should wish to deprive that respectable class, the omnibus cads, of a joke, which they will assuredly make amongst one another, if the Wellington statue should attain its at present intended site. Depend upon it, the cad Jem will say to the cad Bob, as they chevy up Piccadilly, "I say, Bob, which duke do you mean? the iron duke, or the brass duke?"—seeing that one will be a fixture on one side the road, whilst the residence of the other is just opposite. I quite agree with you, that it is in bad taste, and very ridiculous, to place the statue on the top of the arch, but for all that, it is a pity the cad's joke should be prevented: it is of much less consequence (as the committee think) that the arch should be spoilt.—I am, Sir, &c.,

AN OLD SUBSCRIBER.

The proposition has not a single redeeming point; public opinion is unanimously against it; and we do hope, that either through Government interference, or the good sense of some members of the testimonial committee, the contemplated destructive act may be prevented even at this the last moment.

Lord Francis Egerton, as a subscriber, has protested in the strongest terms against the proposition. Why does not his lordship call a meeting of the subscribers?

## AWARDS OF OFFICIAL REFEREES.

### HOSPITALS—FIRE-PROOF FLOORS.

WITH regard to a building about to be added to University College Hospital in Upper Gower-street, in the district of St. Pancras, Mr. Ainger submitted a requisition, setting forth—"it is provided by the Metropolitan Buildings Act, in Schedule C, Part 1, that 'hospitals' are to be deemed to belong to the third, or public building class, and further, in Part 6, with regard to buildings of the third class, that 'the floors of the halls, passages, stairs, and landings, and all other ways of ingress and egress to and from all apartments used for public congregation, must be wholly constructed fire-proof.'

And whereas it is hereby declared, that there is not intended to be any apartment of the said building to be used for public congregation.

And whereas a doubt has arisen whether under such circumstances the rule for fire-proof floors and stair-cases applies to the building in question.

Now I, the said Alfred Ainger, being of opinion that, inasmuch as the said building is not to be used in any part thereof for public congregation, or for the assembly of persons in large numbers for any purpose, a compli-

ance with the above quoted rule is not required; and moreover, that such a compliance would not add to the security or efficiency of the said building for the purposes of the Metropolitan Buildings Act, do refer the same to the official referees."

The Referees determined, "that the wards of a hospital are rooms or apartments used for public congregation, within the meaning of the first recited Act, and that the stairs, landings, and floors in question *are* subject to the rule in Schedule C, part 6, as to fire-proof accesses and stairs to buildings of the third class."

WOODEN PENTHOUSES IN FORECOURTS.

A "pent-house," or projection of wood, was made to and in front of a butcher's shop, situate No. 1, Frederick-place, Kingsland. It consisted of three upright posts of wood, of the height of eight feet, fixed into the ground at a distance of eight feet from the front of the house, and supporting a flat roof covered with zinc; the length of such roof and cornice being 15 feet 3 inches; the width or extreme projection from the wall being 8 feet 3 inches; and the total depth of architrave and cornice being about 15 inches.

The district surveyor contended, "that inasmuch as the said 'pent-house' or projection is of wood, and projects more than 18 inches from the face of the wall, in a street of greater width than 30 feet, it is constructed contrary to the provisions of the Metropolitan Buildings Act, as laid down in Schedule E. And further, that although 'porches,' 'porticoes,' 'shop-fronts,' or 'open enclosures,' may stand beyond the general line of fronts in any street or alley, yet that they must be 'built of brick, tile, stone, artificial stone, slate, cement, or metal, or other proper and sufficient fire-proof materials, and must not be built so as to overhang the ground belonging to any other owner, or so as to obstruct the light and air, or to be otherwise injurious to the owner or occupiers of the buildings adjoining thereto, on any side thereof.' And inasmuch as the said projection is not built of 'brick, tile, stone, artificial stone, slate, cement, or metal, or other proper and sufficient fire-proof materials,' and inasmuch as such projection must, to *some extent*, obstruct the light and air of the adjoining property to the north, the said district surveyor contended that under these clauses of Schedule E, this projection must be considered contrary to the Act."

The owner said, "that inasmuch as there previously existed three posts, fixed in sockets, which supported an awning or covering of canvass; that as the said covering is solely for the purpose of trade, and as it stands solely on ground belonging to the house to which this addition is made (in fact, standing back 2 feet from the line of fence), and inasmuch as he can obtain the consent of the adjoining owner and occupier to the erection of this projection, he contended that it should not be considered as opposed to the provisions of the Metropolitan Buildings Act, or be considered injurious to individuals, or to the public."

The official referees awarded, "that the pent-house, or projection in question, not being a shop-front of wood, projecting only to the extent of ten inches as to its pilasters and stallboard, and one foot six inches as to its cornice, from the front of the building from which it projects, must be in every part thereof as to its component materials, and in every other respect, in conformity with the rule in schedule E of the first-recited Act, as to projections from external walls not forming part thereof."

LANDING PLACES.—PUBLIC STAIRS.

With regard to a certain wooden staircase, proposed to be erected from the flat, and against the terrace wall in front of Mr. Flight's house, situate at the east end of the Adelphi-terrace, and to abut on a warehouse situate on the Adelphi-wharf, Mr. Barron, builder, and the district-surveyor submitted a requisition, setting forth, that "the said staircase is proposed to form a communication between the said flat, or terrace, and the thoroughfare beneath the same, and is intended to be used for the accommodation of the public frequenting the steam-boat pier in connection therewith; that the district-surveyor was of opinion, that inasmuch as the said staircase would overhang and cross the public way, such staircase ought to be built of incombustible materials; and, moreover, that being for the use of the public who might congregate thereon in large numbers, the same must (as prescribed in schedule C, part 6) be wholly supported, constructed, formed, made, and finished fire-proof. Now the said William Barron being of opinion, that the works in question are not (except as regards any operation to be performed to the buildings in connection therewith, irrespective of the construction of the said staircase) liable as to their dimensions and materials to the rules of the said Act, but that the said works, being in the nature of a bridge in connection with two buildings, are works falling within part 1 of schedule B of the said Act, and in respect of which no specific rules are prescribed in the said Act; and being further of opinion, that if the said works are made sufficiently strong, no danger is to be apprehended on account of the materials thereof, we do hereby refer the matter to the said official referees, and request them by their award to determine,—

1st. Whether the works in question are liable to the rules of the said Act in respect of the materials thereof, and to the supervision of the surveyor of the district, or whether such works do not come within the scope of schedule B, as aforesaid; and,

2ndly. Whether, if such works are within the said schedule, the same may be built of the materials and in the manner proposed, subject to the special supervision of the official referees, as provided under sections 7 and 16 of the said Act."

The official referees awarded as to the first question, "That the works in question are not liable to the rules of the Metropolitan Buildings Act, in respect to the materials thereof, nor to the supervision of the surveyor of the district, except as to any operation, in connection with the proposed constructions, which may affect the walls of buildings which are liable to his supervision, but that such works come within the scope of schedule B, as being in the nature of a bridge.

"As to the second question—That such works being within the scope of schedule B, the same may be built of the materials and in the manner proposed, subject to the special supervision of the official referees under sections 7 and 16 of the said Act." Expenses to be paid by Mr. Barron.

## ILLUSTRATIONS OF ANCIENT ARCHITECTURE,

IN THE LINE OF THE GREAT WESTERN RAILWAY.*

Near Oxford, and in the lower part of the Vale of Berks, the Norman style is perhaps more frequent than elsewhere, and in the neighbourhood of Bath and Bristol the perpendicular style prevails. When present, the Norman is most commonly confined to an occasional door or window, to the arch between the nave and the chancel, to the font, or to the lower parts of the walls. Whole churches of the early English, as of the Norman period, are not common. This style appears in such additions as chapels and chancels, lancet windows, and in the double or triple east window sometimes inserted into a Norman chancel. There are some good fonts of the early English period. Examples of the transition into this style from the Norman, and which prevailed at the end of the twelfth and beginning of the thirteenth centuries, though very curious, and not very uncommon, are not always graceful; and it is a marvel how the most elegant of the styles should have arisen from so unpromising an origin. A complete decorated church is a rarity; but detached examples of the style are extremely common. The older parts of the nave, the aisles, the piers and arches between the nave and aisles, are frequently decorated, as is commonly the piscina on the south side of the altar, and the stone stalls that accompany it. The best monumental effigies are of this period; carved armorial bearings, enamelled tiles, stained glass, are rarely earlier; and there appear occasionally a few windows of singular beauty in the transition style between the early English and the decorated, which marked the last thirty years of the thirteenth century. During the next period many new buildings were constructed, and probably an equal number were rebuilt. It is very rare, indeed, to find a church containing no work in the perpendicular style; it commonly forms three-fourths of the whole: frequently, indeed, the font, the arch into the chancel, or the lower part of the walls, are the only remains of the older building. To this period is due much of the tabernacle or carved wood-work of rood-lofts and stalls. The porch is rarely earlier than the decorated, and most commonly in the perpendicular style. The crosses in the church yards are generally perpendicular.

It should be observed, that the system of pronouncing upon the date of a building from the evidence of its style, proceeds upon the assumption that the builders adhered to the style of their own age, and did not imitate, either in additions or repairs, the styles of the ages preceding them. This assumption is no doubt generally well founded, but now and then an example occurs in which the rule appears to have been violated. Such a case is found in the district under consideration at Dorchester, where a small round-headed Norman niche, with a bold chevron moulding, appears in one of the decorated buttresses on the north side of the chancel. It would seem, moreover, from the disposition of the stones, that the niche has not been removed and inserted from the wreck of an older structure, but has actually been executed in the decorated period. A case, apparently at first sight parallel to this, occurs at Iffley, between Dorchester and Oxford. Here the Norman chancel has been lengthened by an early English addition, and in the apex of the new gable is a decided Norman niche. In this case, however, it seems probable that the niche stood in the original Norman gable, and was removed and replaced with the other materials of the wall when the chancel was lengthened. It has also been supposed that the well known Deans'-gate, at Bristol, has been reconstructed in the days of the perpendicular style, to replace an original Norman work. There seems, however, no sound reason to regard this supposition as well founded.

In examining doorways, and especially those of Norman date, care should be taken not to confound an addition with the original work. The arch stones or voussoirs of these doors commonly run the whole depth of the arch, including all or most of the mouldings, whereas the label or dripstone, and sometimes the outer moulding, is composed of a distinct set of stones, fitted upon the convexity of the regular arch. This separation enabled the repairers to remove and replace the dripstone, without disturbing the arch. Thus at Bristol, the whole of the work above the Deans'-gate, down to the stones of the arch, is of perpendicular date; and a similar repair appears to have been performed upon the chancel south door at Ipsden; and in the addition of a decorated dripstone to a Norman doorway at Warborough. Sometimes, as in the south door of Whitchurch, near Pangbourne, and in the north door of Bitton, near Bath, the large Norman opening is filled up with a later and smaller door-case.

The following churches, all standing within an easy distance of the railway, will be found to present the most perfect examples of the several styles.

Of the Norman, Upton-Chalvey, the parish church of Slough; the nave of Clewer, near Windsor; the ruins of Reading Abbey; the south door and parts of the nave of Caversham; the font of Mapledurham; the south and very curious door of Tidmarsh; the font, south door, and chancel, north wall, of Compton; the font, nave, and north aisle of Stanford-Dingley; the nave, part of the chancel, and font of Frilsham; parts of the nave and the south door of Whitchurch; the tower, nave, and chancel of Goring; the north door of Moulsford; the nave, north door, chancel, and font of Newnham-Murren; the fonts of Benson and Nuffield; the chancel of Checkendon; the font and parts of Ipsden; the whole of St. Leonard's, Wallingford; the nave and chancel of Crowmarsh; the tower, nave, and transepts of Cholsey; the south door, nave, and parts of Aston-Tirrold; much of Aston-Upthorpe chapel; the greater part of the nave of Blewberry; the chapel of Upton; the south door of Brightwell; the chapel of Satwell; the north and south doors, and a north window at Appleford; the western end of the north aisle at Dorchester; the church of Sandford; the tower, part of the nave, and the font at Sutton-Courtney; the south side of the nave at Chilton; the font of East-Ilsley; the old font at

* From "History and Description of the Great Western Railway, including its Geology, &c.; with numerous Views." See p. 249, *ante*. Bogue, Fleet-street.

Lockinge; a desecrated chapel in Wantage; and doors at Spursholt, East and West-Challow, Faringdon, Shillingford, Hatford, Charney, Denchworth, Little-Coxwell, Wolstone, South-Marston, Bathford, Bitton, and Queen's-Charlton. In the upper part of the vale the Norman style becomes less frequent, and towards Bath and Bristol it is comparatively rare. The neighbourhood of Cirencester is very rich in Norman churches, and the ruins of Malmsbury Abbey are chiefly Norman. The tower of St. John's, Devizes, is Norman. Chippenham has a fine Norman arch into the chancel. Recently the bases of some columns, apparently in this style, have been brought to light at the east end of the Abbey Church, Bath. Queen's Charlton, near Keynsham, has a Norman central tower, and a very singular detached gateway, with the chevron moulding, remains in the village. At Bristol, the chapter-house and Deans'-arch are the principal Norman remains, but the east end of St. James's, though much concealed, is very perfect, as is the font at St. Philip and St. Jacob.

It is probable, that by far the greater number of the churches throughout England, were rebuilt, or more or less extensively repaired, during the Norman period. In many cases the masonry, always of a substantial character, remains but little changed; in others, the old carved and dressed stones are seen built up into the later parts. In the absence of ornament the Norman work may be detected by the thickness of the wall, by the absence of buttresses or by their extreme flatness when present, and occasionally by the appearance of herring bone, and other oblique patterns, in the masonry; such, for example, as those seen in the Keeps of Guildford, Castleton, and Penline, in the old church at Leicester, and in both nave and chancel of the ruined church of Cogan, near Cardiff. These patterns are borrowed from the Roman works. Frequently the font, and sometimes the doorways, or the arch into the chancel, are the only parts preserved of the old Norman structure. The windows were inconveniently small, and have generally been removed. Sometimes, however, where two have been converted into one, the old Norman jambs remain, and part of the arch, and may generally be detected, as in the chancel at Newnham-Murren. At Goring, the whole lower part of a very heavy Norman wall has been removed, and three very early pointed arches have been introduced below, which open into a later aisle, and carry a heavy Norman clerestory. This is a very remarkable example of what is by architects called under-pinning. Another, though far less complete example, may be seen in the south-eastern arch of the nave of Sutton-Courtney.

Besides the ordinary Norman features of the churches enumerated, there occur a few of peculiar character. Thus at Goring, a well-stair ascends in a singular cylindrical turret, appended to the south-western angle of the tower, and terminated by an original Norman cone and ball. At Crowmarsh is a singular Norman piscina and bracket near the altar; and at Long Wittenham, Dorchester, Warborough, Childrey, and Avington, are fonts with leaden bowls of Norman date, and embossed with rude patterns and figures. The chapel of Woodcote, and the churches of Remenham, Checkendon, Swyncombe, Padworth, and Finchamsted, present examples of the semi-circular eastern apsis, a rare peculiarity, and one which, in England at least, appears to be confined to the Norman period. The examples of pointed and very late Norman, or of the transition from the Norman to the early English style, are here tolerably numerous. In the more beautiful class of examples the semi-circular arch is combined with reduplicated bands of early English mouldings and ornaments, and detached columns, sometimes of black marble, but the examples most common in this part of England consist of a combination of the Norman jambs and columns, with the pointed arch, as in the chancels of Streatley and Crowmarsh; the nave and south door of Basildon; the north wall of the nave, north aisle, and chancel of Ipsden; the font and chancel arch of Rotherfield-Peppard; the nave of Englefield; the font and parts of Aston-Tirrold; the chancel and southern side of the nave of Blewberry; parts of the south chapel at North-Moreton; the nave of Benson; the south door and aisle of Brightwell, Berks; the church of St. Nicholas, Abingdon; the nave of Harwell; the tower of Farringdon, and the nave of Letcombe Regis and Stratton St. Margaret's.

## PROFESSOR WILLIS ON ECCLESIASTICAL ARCHITECTURE.

On Tuesday, the 19th inst., Professor Willis delivered his fifth lecture. He commenced by remarking, that historical investigation and the consideration of ritual had been too much neglected by antiquaries; he had therefore endeavoured, so far, to give them a series of essays, as he might call his lectures, upon the early history of ecclesiastical architecture. He should, however, in the next lecture, enter upon the subject of style. On the present occasion he would give them an account of an English cathedral, shewing the various stages of its erection by the models then upon the table; and he had chosen Canterbury Cathedral, because we knew the history of almost every stone in that fabric. Remarking upon the origin of various portions of an ecclesiastical edifice, he said that people had been accustomed to believe, that each part was raised by some particular prelate, ascribing such parts as had progressed gradually through a number of years, to some unknown benefactor.

Canterbury had been the first seat of Christianity in England, and there Augustine erected a church upon the site of a pagan temple. After the Saxon cathedral was destroyed, Lanfranc, Archbishop of Canterbury, who had previously been Abbot of Caen, undertook to rebuild it, and the professor had found that St. Stephen's Church at Caen, and the English cathedral corresponded in plan and dimensions. Lanfranc's church was parallel trispal, but the smaller apses projected eastward, near the ends of the transepts. The eastern arm was of no great length, the choir extending, as it did in the basilicas, in all churches of this period, and still at Westminster, far into the nave. Two floors being found necessary for the chapels, the apses were so divided, and the transept also had an upper floor, supported by a column in the middle, examples of which in other edifices were still standing.—After Archbishop Anselm came to the see, he took down the eastern arm of the cross, and added what was almost an exact copy of the previous church; for the length of the eastern arm was greatly increased, and it had transepts of its own. The Professor said he knew but one example of a church with double transepts out of England, and there was little reason to doubt, that the archbishop took the idea from the monastery at Clugny, then lately erected, and the abbot of which was a friend and correspondent of Anselm. The extended portion was raised upon a crypt of large dimensions, and the aisle was carried round the apse, which was not the case in Lanfranc's church. The choir was now confined to the eastern arm.

Anselm's building having been destroyed by a great fire, described in a graphic manner by Gervase, and recalling that of York, the monks seem to have been paralyzed by the event, and carried on the service for several years in a choir in the nave, occupying the same position as that of Lanfranc. At length William of Sens, a Frenchman, was chosen in a competition of architects, and the columns and arches were taken down, which the injury they had suffered rendered necessary. Gervase's account of these proceedings, and of the previous buildings, was minute and valuable.

In English churches great attention had always been paid to placing altars towards the east; consequently this consideration, and the desire to preserve the tombs of the saints, materially influenced the alterations of the plan. The spot where Becket fell was in the northern transept, and there the central pillar and the vault, before alluded to, were cleared away for an altar. The Trinity Chapel at the east also was enlarged considerably, for Becket's tomb and shrine, and an upper range of trefoiled windows was placed above those of the aisles. But, before the completion of these works, an accident happened to the architect, by which he was completely disabled, and they were carried on under another William, an Englishman, who seems to have followed the general plan of his predecessor, and carried out the decoration, wherever the work would be in immediate contact, but in other places, as the aisles, seems to have given more scope to his own imagination. Now, between the works of these two architects, there were, notwithstanding, some curious differences. The steps rising beyond the altar, on which stood the patriarchal chair, actually concealed the bases of the columns, and the crypt, in which was Becket's tomb, became of very lofty dimensions.—The professor recommended, that in all examinations of buildings, the crypt should be considered of most importance, as in that part the original plan was generally preserved.

Attached, at this part of the plan, were certain chapels, which being too precious to be destroyed, it was necessary to contract the width of the church. The aisle, or *procession path*, was carried round the apse, and lastly, at the east, there was the circular building called Becket's crown. Thus his auditors would see how this extensive building gradually arose, and how it was influenced by considerations of ritual, and others arising from the murder of Thomas á Becket, whose shrine, elevated like that of the confessor in Westminster Abbey, was the cause of great wealth to the church. The number of towers about the building was greater than in most cathedrals; and, in his opinion, the destruction of the western tower of Lanfranc's to erect one similar to the perpendicular tower at the opposite side, was an act which could not be approved of.—In the course of this lecture, the professor read translations from Gervase and other chroniclers, which may be found in his valuable book on the cathedral, lately published.

## SCULPTURE FOR THE SOUTH FRONT OF THE BRITISH MUSEUM.

Sir,—In continuation of my suggestions on this subject inserted in last week's number of The Builder, I would call your attention to the feasibility of still further enriching the appearance of the south façade of the Museum, by introducing a sculptured frieze, expressive of the uses and objects of the building, along the whole length of the main walls of the building, behind the colonnade, which latter appears to be at present simply ornamental. I would therefore propose to turn it to some further account, by making it a useful screen and protector for sculpture—applied as in the Parthenaic frieze in the Elgin collection, and by introducing appropriate figures or groups, of imposing proportions, at intervals within the shelter of the colonnade.

I see no reason why the example shown in the façade of the Museum at Berlin, should be neglected—only substituting the more severe enrichment of sculpture, for the more pictorial decoration adopted on the wall of that building.

It may be, that the area contained between the south façade of the *National* Museum and Great Russell-street, affords a fair opportunity for improving on what has been done in the area fronting our *National* Gallery; and I think there is no difficulty in fixing the sites for two well-proportioned fountains, and a statue of the monarch under whose auspices the Museum will have been completed. It may, perhaps, be asked, whether the internal quadrangle of the building should not have a central fountain at least, if nothing further be introduced to enliven its present somewhat monotonous effect.—I remain, Sir, &c.,

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May 18, 1846.

The Power of Speech.—We are, most of us, far from justly estimating the power of speech even in its humblest form. The very commonness of this gift, as of all our greatest blessings, has led, as usual, to its depreciation. And yet, did "too much familiarity" allow us to see it, it is truly a wonderful thing that results so vast can be produced by means so simple; that a word dropped lightly should sink into the hearts of thousands, and change more or less, their minds and lives; that no time or space can terminate,—nay, that time only strengthens, as space spreads, its power. To few, doubtless, are such "winged words" given; but in kind, if not in degree, are all men heirs of this faculty, and did they rightly judge its value, it would be less wasted, still less abused. The steam, which, if compressed, would do the world's work, escapes with loud noise and palpable mist. It may glitter in the sunbeam, but it diffuses itself unprofitably abroad.—*Dr. Hodgson's Second Address to the Liverpool Mechanics' Institution.*

## RAILWAY JOTTINGS.

From official returns, it appears that the amount of traffic for the week before last, on nearly 1,800 miles of railway, was 138,913*l.*, thus accounted for:—76,451*l.* for the conveyance of passengers only, 35,774*l.* for the carriage of goods, and the remainder of 26,708*l.* for passengers and goods together, not respectively apportioned; being an increase over the corresponding week of last year of 25,383*l.* ——The *Times* thus sums up the capital likely to be wanted for the bills, of which the preambles are already proved:—"Irish railway bills read a third time in the House of Lords, 3,063,000. English and Scotch railway bills, read a third time in the House of Commons, 10,982,000*l.* Total read a third time, 14,045,000*l.* Preambles of other Irish railway bills proved in the House of Lords, 9,686,082*l.* Preambles of other English and Scotch railway bills proved in the House of Commons, 15,929,809*l.* Total, 25,615,891*l.* Grand total of capital for which preambles have been proved, 39,660,891*l.*"——It appears from a report of the Board of Trade, that the number of accidents on railways, attended with personal injury or danger to the public, arising from causes beyond the control of passengers, were, during 1844, ten killed and seventy-four injured; owing to their own negligence or misconduct, seven killed, nine injured. The proportion which the number of passengers killed bears to the total number carried is:—In 1840, one in 274,085; in 1841, one in 852,073; 1842, one in 4,271,689; 1843, one in 8,524,175; 1844, one in 3,036,305; and in the first six months of 1845, one in 8,360,275. ——At two special meetings of the Birmingham and Midland Companies, recently held under the provisions of the "Relief Bill," for the consideration of the several projects of branches, &c., now before Parliament; the amount of capital represented in the rooms, taken collectively, was no less than 10,000,000*l.* ——The Wearmouth Dock Company have assented to the sale of their dock to the Newcastle and Darlington Junction Railway Company.——The bill for improving the ferries across the Humber in connection with the Great Grimsby and Sheffield Junction Railway, gives the company power to establish steamers and to erect works on the Lincolnshire Coast within seven years. On the other hand, it restrains the Dock Company at Hull from erecting similar works, and the company themselves from constructing works below high water mark without the consent of the Commissioners of Woods and Forests. The bill provides minutely for the rate of tolls on all sorts of goods, cattle, &c.——The transit of stone from the Purbeck quarries to the several railway termini at Poole, is about to be facilitated by the formation of a tram-road from near Worth, to the waters of Poole harbour.——The middle arch of the Preston viaduct has been repaired, and the road over it restored. ——One of the arches of the Skew-bridge over the Lewes-road, which had also been affected by the wetness of the season, is about to be rebuilt.——A large embankment on the Lancaster and Carlisle railway, near Wreay, south-west of Carlisle, also lately gave way and destroyed several farm buildings near its strong breast wall. —— The foundation-stone of the new Tunnel-bridge, over the river Conway, for the Chester and Holyhead Railway, was laid on Friday before last. ——A station is to be erected at Shenfield for the Eastern Counties Railway.——The fact that Romford, Brentwood, &c., on the Eastern Counties line, now carry on a thriving trade in milk with the metropolis, is a striking illustration of the creative effect of railways on the trading resources of a district. Not many years since, the inhabitants of the district in question would have ridiculed the idea of such a trade.—— The Eastern Union was lately opened and part of the carriages for the traffic of the line have arrived at Ipswich. The temporary station is in rapid progress, and the spot presents a scene of much animation.——The works on the Caledonian Railway are in active progress along its whole extent. There are upwards of 7,000 men at work on the line, and there is every prospect of a great portion of it being open for traffic in the summer of 1847.——The whole of the North British line from Berwick to Edinburgh is expected to be opened on the 1st of July.——A trip from Leicester to Edinburgh *via* Newcastle by rail and thence by steamer, is in contemplation for the 23rd of June next. The expense of transit will be less in proportion than that of any similar excursion. Special trains to London and Leeds are also shortly to be announced, and we perceive that a cheap and expeditious holiday trip from Liverpool to London is to take place on the 30th instant, returning on the 13th of June, and on the 1st June returning on the 8th, thus allowing parties fourteen days in the one case, and a week in the other, to see the lions of the great metropolis.——The Newcastle and Carlisle Company have commenced running cheap trains on Sundays to all the stations along their lines, at the low rate of one half-penny per mile.——The directors of the Lancaster and Carlisle Railway announce, that having now given to the Lancaster Canal Company, the requisite notice of their intention to take possession of the Lancaster and Preston line on the 1st of July, the present charges on that line will be thenceforth considerably reduced.——The Great Western Company are building a class of passenger engines 25 tons in weight with driving wheels of 8 feet diameter, which will be equivalent to 120 tons at seventy miles an hour!—— One of Stephenson's patent six-wheel engines lately ran from Birmingham to Wolverton, a distance of fifty-two and a half miles, in one hour and ten minutes with a train containing 100 tons of goods. When the engine reached Ackemon-bridge, near the station, the funnel was struck down, its height having exceeded by 6 inches the altitude of the arch of the bridge.——The site of the Lincoln station for the Nottingham and Lincoln line will cost the Midland Company, it is said, but little short of 20,000*l.* It will include an area of ten or twelve acres. For one purchase they have already given 6,000*l.*, for another 5,500*l.*, and for a third they are at present in treaty. ——The South Eastern Company have kindly offered their spare land for allotments for the labouring poor.——It is pleasing also to hear that the Southampton and Dorchester, and the Wilts, Somerset, and Weymouth Railway Companies have resolved not to injure that venerable piece of antiquity the Amphitheatre in Fordington-field, near Dorchester. Both lines will pass within a few feet of it.—— Some idea may be formed of the quantity of coke that will be made at the Blackwall Terminus of the Thames Junction Railway, from the fact that forty coke ovens are now in course of erection, and when they are completed, forty more will be erected.——The electric telegraphs, those "Highways of thought" as they have been aptly called, are rapidly pervading the whole face of the country. The communication from London to Masborough is nearly completed. Leeds, Manchester, and York, are fast approaching towards their electrical community of intercourse, and in fact, on almost every line of railway they are running along like nerves associated with these arteries of commerce. Some recent novel feats of this wonderful invention have been the subject of gossip, and are not unworthy of record as the first glimmerings of a new world of wonders. The solicitor to a bankrupt's assignees at Southampton, lately communicated with the Commissioner of Bankrupts at Serjeant's-Inn through the electric telegraph, and thus procured an adjournment of his case, which it would otherwise have been impossible to have accomplished. Mr. Smith, of Serjeant's-Inn, to whom the express was forwarded, has stated, that on one occasion he had a message from Southampton reduced to writing and delivered at his office in seventeen minutes after its dispatch from Southampton. It is also said, that a pay-serjeant at Portsmouth, who had absconded after robbing his captain, was secured at the London terminus of the South Western, to which his flight was notified by telegraph, while thus on his way to his own doubtless very unexpected capture.

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The taking down of the spire of the Cathedral of St. Denis has just been completed. Each workman receives a present of 50 francs for the danger he has incurred. The Commissioner of Civil Buildings is to proceed to St. Denis this week, to decide what is next to be done.—*Paris paper.*

## NEW ATMOSPHERIC RAILWAY,
### WITHOUT A LONGITUDINAL VALVE.

At a meeting of the Society of Arts, on May 20th, a paper was read explanatory of an invention by Mr. C. H. Collins, and for which he has taken out a patent.

The object of this invention is to prevent the loss of power caused by the leakage of air through the longitudinal valve, still in use in atmospheric railway schemes; and Mr. Collins aims at the accomplishment of this very desirable object by boldly dispensing with the longitudinal valve altogether, or at least by destroying its unity, and cutting it up, as it were, into a multitude of small valves, ingeniously protected by air-tight apparatus,—through which, nevertheless, the power of the interior appears to be effectually conveyed to the exterior purpose, so as to accomplish all the ends of the ordinary atmospheric machinery, without *its* disadvantages, at least, if not without equivalent disadvantages of another sort.

The traction-pipe is first of all provided with longitudinal slits, of about 25 feet each in length, which slits are divided from each other by an equal length of entire pipe. But each slit is covered by an air-tight box, bolted on bottom up along the slit, and with no opening whatever, except at each extremity, to which is fitted on an air-tight slide-valve. The traction-pipe, as usual, is laid between the rails, the slit and boxed side uppermost; while through each box thus superimposed (but not through the pipe), *an iron "driving rod,"* longer than any one box or slit, threads its way, running from one to the other, of course, through their valved extremities, the rod exactly fitting the rectangular apertures, closed on all other occasions by the sliding valves. On this needle-like rod are a two-fold series of *notches*, corresponding to a two-fold series of *forks*, provided with friction-wheels, and working in sockets with springs; one series being fixed on a stage, or bar, *in the interior of the pipe*, supported at one end by the piston, at the other by a false piston, and between these by a wheel running along the under surface of the interior of the pipe. The other *series* is similarly fixed on a bar, running parallel with the pipe, the slits, the boxes, and the piston-stage, but *connected with the carriage;* and the carriage-bar and the piston-bar, as well as the driving-rod, are *longer* than any *one* box, or than any *one* of the slits which the boxes cover, so that when a box is right between them, they project beyond its valved extremities, and the two end-forks of each are about 30 feet apart, while between these extremities the forks correspond with the notches of the driving-rod, so that when one is in gear the others also would, unless prevented.

The extremities of each box are sloped, or inclined, both within and without, in such a way that the forks within the pipe, while sliding freely in their sockets, as their springs urge, and as their friction-wheels permit, rise through each slit along one of the inclined extremities of each box, run along the interior of the box, and dip again along the other inclined extremity into the pipe, and along its unslit inner surface. The forks outside, in like manner, rise along one of the sloping ends of each box, run along the top, and again fall along its other sloping end, and run along the top of the unslit part of the pipe.

The forks of the piston-bar within, the notches of the needle-like driving-rod, and the forks of the carriage-bar without, thus work in mutual connection, so that, although the interior forks quit the notches of the driving-rod every time they are made to dip out of the boxes, or the slits which they cover, into the unslit pipe itself, and although the exterior forks only gear with the notches of the driving-rod when they fall along the sloping end of one box, and are made to quit them when they rise along the sloping end of the next, yet one at least of the forks of each set will always be in gear with the driving-rod,—the first one being always in gear before the last one quits its hold.

Thus, while the driving-rod threads its way through the box valves, impelled by the onward movement of the piston, communicated to it by the piston-stage-forks in the interior, the same notched driving-rod, thus driven itself, will impel the carriage by means of the gearing of the carriage-bar-forks with its appropriate series of notches. And thus, while

so impelled and so impelling, the only apertures through which it is possible for air to have access are those at each extremity of the close and air-tight boxes covering the longitudinal slits in the traction-pipe; and these, by an ingenious and effective mechanism, are *opened*, if we can call it so, only while they are filled or closed by the air-tight fitting driving-rod, as it threads its way through them. And finally, thus, in what from the working of the model would appear a practicable manner (though there are some objections in the way), has the formidable difficulty of connecting the piston within the traction-pipe with the carriage without, in the absence of any continuous slit in the pipe, been overcome.

In an equally simple manner other, though minor, difficulties have been surmounted. Thus, air is prevented from entering the antecedent vacuum of the traction-pipe through the boxes covering the slits, while the piston is passing beneath them, by the requisite operation of a double piston and a spring. Thus, also, the driving-rod is supported independently of the gearing of its notches, by another piece of mechanism; and besides other appropriate and necessary devices, there is a modification of the whole invention, which consists in the formation of, or recurrence to, a continuous slit or longitudinal groove in the traction-pipe, but covered by a series of continuous air-tight boxes, running each a length of 25 feet or so, first on or towards one side of the slit or pipe, and then for an equal length towards or on the other,—the rod threading its way through them, and entering and exiting through valved apertures, to the same effect as before, in connection with similar forks, but without springs, or in connection with "griping instruments or pincers" instead of forks at all. But into these minutiæ we cannot here enter.

## THE ART UNION QUESTION AMONGST THE PEERS.

In the House of Lords, on Friday the 22nd instant, the Duke of Cambridge presented a petition from the committee of the Art Union of London, praying for the permanent legalization of art unions. The illustrious Duke strenuously supported the prayer of the petition in a very able speech. In Hanover, where some years ago he had assisted to establish a similar institution, the greatest advantage had been found to result, and it was impossible to deny that great good had been effected by the Art Union of London.

Lord Monteagle said, that he wished to call the attention of her Majesty's government to this petition, which was the first of a series that would be presented on the subject, representing the feelings of not only the artists of the country, but the great body of those who were interested in the fine arts. The committee of the House of Commons, appointed in 1835, had made inquiries, which showed that art unions had been attended with the most beneficial consequences wherever carried out. The amount of capital which had been devoted to the purposes of art by the art unions, exceeded all the votes which Parliament had ever given for that purpose. They had done more for the promotion of art than the Legislature ever had done. They had applied their encouragement to every branch of art; they had given prizes, as government had done, for the best designs; they gave prizes also for the best productions in bronze and marble. They had extended, too, their association over the greater portion of the earth; and a letter had been received that very day from China, giving an account of the establishment of a branch of the art union in that empire. It was scarcely to be believed that, in defiance of all the experience which they had had on this subject, any doubt should exist as to the desirableness of legalizing art unions. A committee had been appointed by Parliament, who had laboured sedulously for two sessions, and they had reported in the most unqualified manner, that these associations should be legalized. It appeared that the art unions were as anxious as any society to prevent abuse; they did not wish to encourage lotteries, but they prayed their Lordships to give their sanction to a bill authorising the Crown to grant a charter, subject to such conditions as might be proposed. That was the utmost extent of their request; and when their lordships considered that they had released parties from debts contracted at race-courses and gambling-houses,—and when they considered that they had, in the course of last year, interfered to protect a great body of the people—those connected with the newspaper press—the artists of this country were not asking their lordships too much, to afford them a similar protection.

Lord Brougham said, that he was grateful to his noble friend, and to the illustrious Duke, for having brought forward this subject, for he believed there never was a grosser delusion than that which some few individuals entertained, namely, that because exemption was to be given to art unions, a similar exemption ought to be given to other tradesmen, such as carpenters, blacksmiths, &c. (Hear.) The fact was this: those tradesmen dealt in articles which were always in general and effectual demand, but articles of taste seem to require some extraordinary encouragement. We had already founded the Royal Academy for the purpose of giving encouragement to the arts. No doubt the Royal Academy had been of much use to the fine arts. Perhaps it would have been of more use if it had been a little less exclusive, and if a greater encouragement had been given to those who were not members. (Hear.) He believed that these art-unions had been the means of expending far more money in the encouragement of the arts, than had ever been given by the munificence of the country.

Lord Ashburton presented a petition from the Society of Artists in Water Colours, to the same effect.

The Marquis of Lansdown presented a similar petition from certain artists of the United Kingdom; amongst the names he saw those of Eastlake, Roberts, Ross, Landseer, Westmacott, and Barry. (Hear.) He thought that the time had now arrived for some permanent legislation on this subject. That question ought to be kept entirely separate from the question whether such a description of rewards tended to affect in any way the higher branches of art. That question was one which might safely be left to the discretion of individuals to decide. Parliament ought only to take care that these societies did not, for the purpose of profit, establish lotteries. He believed that it would be easy to frame a bill prohibiting these societies from entering into such speculations. He concurred with his noble friend, that authority ought to be given to the government to grant charters to those societies, after a full preliminary inquiry had been had in each particular case.

The Marquis of Northampton presented a petition in favour of legalizing art unions, from the members of the Royal Birmingham and Midland Counties Art Union.

Lord Monteagle presented similar petitions from the Society of British Artists, and from Macclesfield.

## NOTES IN THE PROVINCES.

At a meeting of the society for promoting the enlargement, building, and repairing of churches and chapels, held on the 18th instant, it was determined to grant money to sixteen parishes and districts, for the increase of church accommodation in some of them, and for the erection of six new churches—at Postwood, near Southampton; Cottmanhay, near Nottingham; St. Luke, in the parish of Leek; Newcastle, in the parish of Clun; and St. James, Burnley, and East Compton, in the parish of Oldham, Lancashire; containing in all a population of 13,787. The chapel of St. Ann, Bishop Auckland, and the parish churches of Tretherne, near Dursley, and Brimington, near Chesterfield, also are to be rebuilt with enlargement; Jesus Chapel, St. Mary, extra Southampton, and the church at Hemyock, near Wellington, enlarged; and the churches at Maddington, near Devizes; Alborough, near Harlestone; Lyddington, near Swindon; Sutton-on-Derwent, near York; and Radcliffe, in Lancashire; reseated.——The Birmingham Church of England Cemetery Bill received the royal assent on Thursday week. By one of its clauses, power is granted to the rector or incumbent of any church in the town, to refuse further burials in the churchyard should it become overcrowded.——The sum of 3,200*l.* has been subscribed in aid of the fund for the erection of the new church of St. Barnabas, at Ipswich.——The new college at Marlborough, for the education of the sons of clergymen and others, will be completed and ready for pupils by July next.——Ford Abbey, Chard, once a celebrated monastery, is about to be sold by auction.——A workhouse will shortly be required for the Runcorn Union.——The foundation-stone of the monument (a place of worship), to John Knox, at Edinburgh "on the spot where he lived and died in that city," was laid on Monday week.——The fountain on the Steine, Brighton, is completed.——The baths at Perth are advancing rapidly towards completion, but are likely to be arrested from want of funds. "Yet," says a correspondent of the *Edinburgh Register*, "a population of 20,000 are supporting nearly 300 public houses!"——On the motion of Mr. Dennistoun, the Lords' amendments in the Glasgow Union Arcade Bill were agreed to.——A portion of the old French prison at Dartmoor, has been taken by a company for the erection of a chemical apparatus and the extraction of naptha, ammonia, tar, &c., from the Dartmoor peat.——The inhabitants of Hull appear to be awakening to a sense of the defective state of the drainage and other nuisances in various parts of their populous town; the mayor has of late "received a great number of letters complaining" of them, and measures are about to be taken for their removal.——Considerable progress has been made with the breakwater at Harwich.——At Middleton, in Lancashire, a great many buildings,—new streets, mills, and separate dwellings,—are at present in course of erection, forming altogether a very marked contrast with the state of this place about a century ago, when, on the very spot now becoming a seat of extensive manufactories, there existed "a noble park, well wooded and watered, abounding in retired groves," where and when "there were seldom heard any other sounds than the huntsman's horn, or the axe of the woodman, whilst Sir Ralph de Assheton lived at the hall of his ancestors in feudal dignity; surrounded by a body guard of honest, bold, and faithful peasantry, who roamed with their chief in his sporting expeditions over the far extended domains of the barons of Middleton." But this is a tale which might be told by many more of our thriving towns and fields of manufacturing and railway enterprize, while, on the contrary, for want of like advantages in position and in means of local and more general intercourse, it surely must be, that such towns as Dartmouth have, at this same moment, so different a story to tell: "There never was a town," says the *Western Times*, "which has been more ill-treated than Dartmouth, nor more undeservedly. There is the harbour, which will accommodate the largest man-of-war, clasping her in its long arms so jealously that the sea shall not even look at her. There it is, an exquisite lake, to which you can see no outlet for the lofty wall of verdure on every side. There are all its acknowledged capabilities for commerce, with capacious quays and docks, and an industrious and enterprising population, crying out for employment. Why are they not employed? There are, above all, the unequalled natural beauties of the scenery, and the healthy air—a compound of sea breezes (with the fog off in most seasons) and of the heathy fragrance which the Dart brings along with it from the Moor. Why don't invalids, and fashionables, and tourists, and summer-loungers, and picturesque hunters, come here? How is it that any body ever goes any where else? There is no scenery like this. It cannot be described; it surpasses imagination."——It appears to be at length determined that his Royal Highness Prince Albert will proceed to lay the foundation stone of the Sailor's Home at Liverpool, on the 30th or 31st of July next; but there is no reason to think that her Majesty will accompany the Prince.

Rather Extensive.—A New York paper states, that a young artist of Louisville, Kentucky, is engaged on a picture which, when completed, will cover upwards of three lineal miles of canvass! It is a panoramic view of the Mississippi and Ohio rivers.

University College Hospital.—The first stone of the north wing of this hospital was laid on the 20th instant by Lord Brougham, the president of the council of the college. Mr. Alfred Ainger is the architect.

DOORWAY: BICESTER CHURCH, OXON.

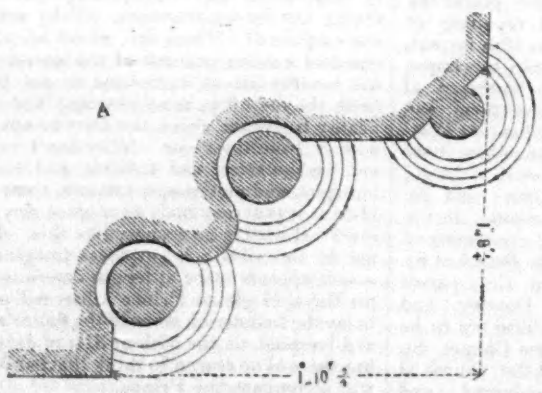



*Fig.* 2.

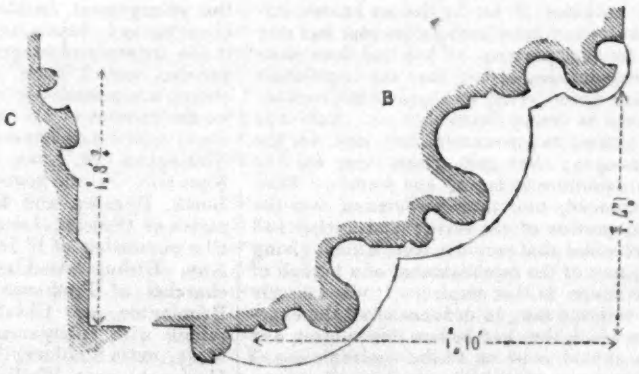



*Fig.* 3.

**DOORWAY: BICESTER CHURCH, OXON.**

**This church, dedicated to St. Eadburgh, was partially rebuilt in 1400, on the site of the former edifice; it is a large structure, with but little worthy of notice; the north porch is a fair specimen of perpendicular work, and is the subject of one of the illustrations in Parker's Glossary; the doorway shewn in the engraving is on the south side of the church; it is an excellent specimen of early English, the foliage of the capitals and the arch mouldings very good; the return of the drip moulding has a very sudden termination, and I am inclined to think it was originally continued as a string.—Fig. 2 shews section of jamb; fig. 3 section of arch mouldings.**

**In making some excavations here in 1819, the foundations of the conventual buildings belonging to the priory, a vast mass of sculptured fragments, pieces of painted glass, and other relics, were discovered.**

## FLAXMAN'S SHIELD OF ACHILLES.

Mr. Freebairn has just now produced an engraving of this celebrated work, in eight plates of large size, in a portfolio, which deserve the special attention of all who are interested in high art.* The shield of Achilles, first modelled in 1818, afterwards cast in silver and gilt for George IV., is one of the finest works of modern times. It was justly spoken of by Lawrence, in his eulogium upon Flaxman, as "that divine work, unequalled in the combination of beauty, variety, and grandeur, which the genius of Michael Angelo could not have surpassed."

> "Five ample plates the broad expanse compose,
> And god-like labours on the surface rose.
> There shone the image of the master mind;
> There earth, there heaven, there ocean he designed."

The effect on the progress of the arts, produced by this and other of Flaxman's productions, was great and widely spread. "We may affirm," says Cicognara, "that they have mainly contributed to awaken sculpture from a certain monotonous lethargy, and to restore the golden style,—the severity of the antique—which he knew how to apply to his own designs."

The fidelity and beauty of the engravings before us are beyond all praise; were Flaxman alive, he would be proud to see his noble work so nobly transcribed. We sincerely hope that Mr. Freebairn's labours will meet with the encouragement they deserve. A very large sale can scarcely be looked for; it is therefore the more incumbent on the discriminating few to give their aid; and they may rest satisfied, that by assisting to increase the circulation of such a production as this is, they are advancing a good cause. When the works of Flaxman are fully appreciated amongst us by the multitude, the arts will take a high place in England.

The engravings are accompanied by a portrait of the great sculptor, from a model by himself, and the illustrated passage of the Iliad, in Greek, English, German, and French.

## ON THE DEVELOPMENT AND CONVERSION OF CONVEX SURFACES.

In No. 168 of The Builder there is given a method of converting the convex superficies of a cylinder and cone into a circle of equivalent area, or of finding geometrically the radius of a circle that shall contain an area precisely equal to the cylindrical and conic developments. This method of conversion, however extensive it may be as applied to right-lined figures, is very limited in its application to solid bodies bounded by curved surfaces; for, with the exception of the cylinder and the cone, together with their various ungulas, hoofs, and frustums, there is no other solid figure so bounded, that admits of a perfect geometrical development or expansion upon a plane. The sphere and its various segments and zones are, it is true, convertible; that is, a circle can always be found to contain an area equal to the convex surface of a sphere, or any segment or zone thereof; but since these bodies are bounded by a convexity of double curvature, they do not admit of a rigorous geometrical development; and for this reason it is not intended to include them in the present inquiry; we shall, therefore, proceed with the consideration of the conic frustum, a figure which furnishes another beautiful application of the principle, so successfully employed in the conversion of the cylindrical and conic superficies mentioned above.

Let A$ab$B be a conic frustum, of which the diameters are AB and $ab$, the corresponding planes being parallel to each other, and the slant sides, A$a$ and B$b$, equal and symmetrically placed in reference to the diameters AB and $ab$. Produce the slant sides, A$a$ and B$b$, to meet each other in the point V; then is V the vertex, and AVB the complete cone from which the frustum, A$ab$B, is cut. Here, then, it is obvious, that the convex surface of the frustum is equal to the difference of the surfaces of the containing cones, AVB and $a$V$b$.

Put D = AB, the greater diameter of the frustum; $d = ab$ the lesser diameter; $l$ = AV the slant length of the entire cone, the vertical length or axis being VH, and let $\pi = 3{\cdot}1416$, the circumference of a circle whose diameter is an unit; then, since the circumferences of circles are proportional to their diameters, we have

$1 : \pi :: D : D\pi$, the circumference of the greater end of the frustum; and

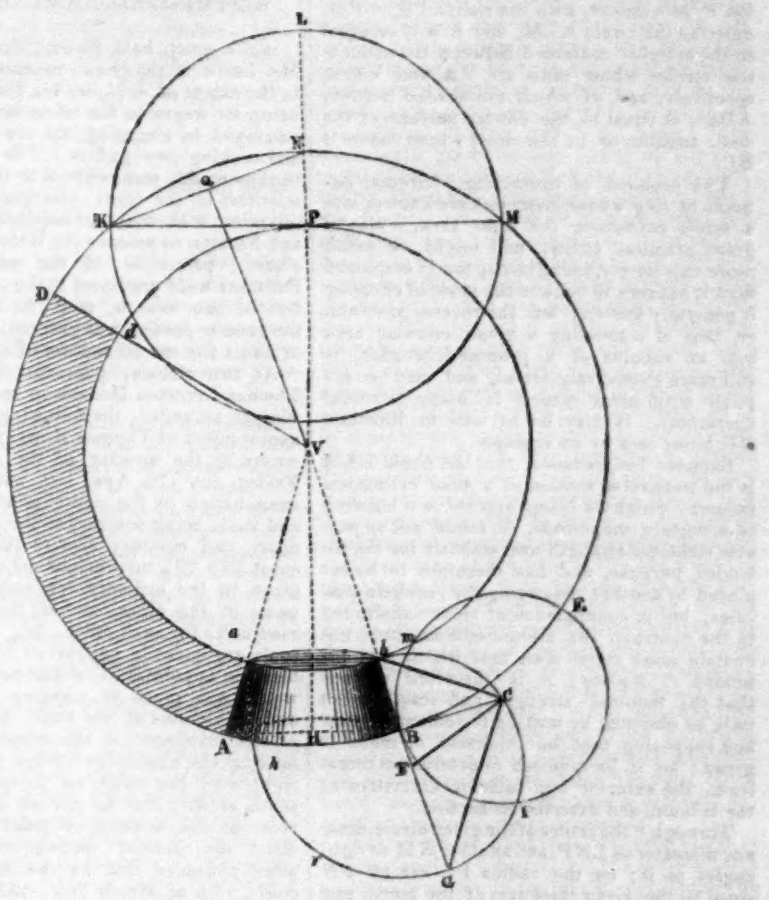
$1 : \pi :: d : d\pi$, the circumference of the lesser end.

But the convex surface of a right cone is expressed by the product of its slant length and half the circumference of its base; consequently, the convex surface of the whole cone, AVB, is expressed by the term $\frac{1}{2}D\pi l$, and that of the upper cone, $a$V$b$, by the term $\frac{1}{2}d\pi \times \overline{aV}$; therefore, by taking the lesser of these expressions from the greater, we get $\frac{1}{2}\pi(Dl - d \times \overline{aV})$ for the convex surface of the conic frustum, A$ab$B, being the same as the rule usually given for that purpose in books of mensuration. But in order to exterminate the quantity $\overline{aV}$ from the above expression, we must find its value in terms of D, $d$, and $l$, which are supposed to be given in the problem; and for this purpose, we must have recourse to the similar triangles, AVB and $a$V$b$, constituted by a section along VH, the axis of the cone, from which we get,

$D : d :: l : \frac{dl}{D}$; that is, $a\overline{V} = \frac{dl}{D}$; therefore, by substitution, the surface of the conic frustum becomes as follows, viz.:—

$$surface = \tfrac{1}{2}\pi(D+d) \times \frac{l}{D}(D-d)$$

Now, it is here manifest, that the member, $\frac{1}{2}\pi(D+d)$ expresses one-half the sum of the circumferences of the ends of the frustum, of which the diameters are D and $d$; and the other member, $\frac{l}{D}(D-d)$ is obviously the slant distance between the circumferences. If, therefore, we suppose the cone, AVB, to roll itself upon the plane of the paper, about the vertex V as a centre, every part of the convex surface of the frustum will apply itself to the annular segment, AD$da$; and when the side, AV, on which the rolling motion commences, coincides with DV, the development of the frustum's convex surface will be represented by,




and equal to the annular segment just mentioned; and we have now to shew how, according to the principle we are discussing, we can determine geometrically the radius of a circle that shall contain precisely the same area as the annular segment, AD$da$.

Let $\delta$ represent the diameter of the circle required, then, by the rule for a circular area, we have $\frac{1}{4}\delta^2\pi$; and if this be compared with the area of the annular segment, or the surface of the conic frustum above given, we get

$$\tfrac{1}{4}\delta^2\pi = \tfrac{1}{2}\pi(D+d) \times \frac{l}{D}(D-d),$$

and by expunging the common symbol and extracting the square root of both sides of the expression, we obtain the following form as the germ of construction; that is,

$$\tfrac{1}{2}\delta = \sqrt{\tfrac{1}{2}(D+d) \times \frac{l}{D}(D-d)};$$

an expression which implies, that the geometrical mean between half the sum of the diameters and the slant length of the conic frustum, is equal to the radius of a circle containing an area precisely equal to the convex surface; hence the following construction.

From $a$, the extremity of the shorter diameter $ab$, let fall the perpendicular $ah$, meeting the longer diameter AB in the point $h$; then is B$h$ half the sum of the diameters AB and $ab$. Produce $\delta$B the slant length of the frustum directly forward to G, and on B, as a centre, with the distance B$h$, describe the circular arc $hr$G, meeting $\delta$B produced in G, and making BG equal to B$h$, so that $\delta$G is equal to the slant length of the frustum, and half the sum of its diameters extended in one line. Bisect $\delta$G in F, and on F as a centre, with FG or F$\delta$ as radius, describe the semicircle $\delta$CG, and, at the point B, erect the perpendicular BC, meeting the semi-circle $\delta$CG in C; then is BC the radius of the circle sought, being a geometrical mean between $\delta$B, the slant length of the frustum, and BG, half the sum of its diameters. Upon C, as a centre, with the radius CB, describe the circle B$m$EI, and it will contain exactly the same area as the annular segment AD$da$, which is equal to the development of the convex surface of the conic frustum.

The construction of the annular segment AD$da$ is very simple; for since the exterior arc, AD, is equal in length to the circumference of a circle whose diameter is AB, and the interior arc, $ad$, equal to the circumference of a circle whose diameter is $ab$, it follows that the angle AVD, at the centre of the sector, bears the same proportion to 180 degrees, or a semicircle, as the diameter AB does to AV, the

* Published by himself, at 23, Mornington-place, Hampstead-road.

slant length of the entire cone, or the radius of the outer arc, AD; that is,

$$AB : AV :: \angle AVD : 180^{\circ};$$

and by inversion, it is

$$AV : AB :: 180^{\circ} : \angle AVD;$$

hence the angle of the sector is known, and being laid down from some angular instrument, the direction of the line VD is known; therefore, if on the vertex V, as a centre, with the radii VA and V*a*, the arcs AD and *ad* be described, they will constitute the exterior and interior boundaries of the annular segment AD*da*.

If with the same radii, VA and V*a*, the entire circles ADME and *ad*P*m* be described, they will enclose the entire annulus, of which AD*da* is a segment, and a circle, of which the area is precisely equal to this annulus, may be determined as follows:—Produce HV, the axis of the cone AVB, to meet the inner boundary of the annulus in P, and through the point P draw the tangent KM, meeting the outer boundary in the points at K and M; then is KM the diameter of a circle containing the same area as the entire annulus. On P, as a centre, with the radius PK or PM, describe the circle KLM, and it will be equal to the annulus contained between the concentric circles whose radii are VA and V*a* respectively, and of which the shaded portion, AD*da*, is equal to the convex surface of the conic frustum or to the circle whose radius is BC.

The problem of converting a circular annulus or ring whose diameters are known, into a circle containing the same area, is also of great practical utility, and might be much more extensively and advantageously employed than it appears to be, was the mode of effecting it generally known; but the reverse problem, or that of converting a given circular area into an annulus of a proposed breadth, is still more extensively useful, and may be applied with great success in many practical operations. It may be as well to illustrate this latter case by an example.

Suppose for instance, that the circle KLM is the transverse section of a solid cylindrical column, which on being applied to a building of a certain magnitude, is found not to possess sufficient strength and stability for the intended purpose, and has therefore to be replaced by another possessing the requisite qualities; but in consequence of some conditions in the contract, the altered column must not contain more metal than that which it is intended to replace; it is therefore obvious that the required strength and stability can only be obtained by making the column hollow and supposing that the thickness of metal is given; let it be required to determine therefrom, the exterior and interior diameters of the column, and describe its section.

Through P the centre of the given circle, draw any diameter as LNP, and another KM at right angles to it; on the radius PL set off PN equal to the given thickness of the metal, and draw KN; bisect KN in Q, and at Q erect the perpendicular QV to meet LP produced in V; then is V the centre of the column. On V as a centre with the radii VP and VN, describe the bounding circles P*dam* and NDAE, and the thing is done, the section being represented by the annulus in the figure. The more intelligent readers of THE BUILDER will find no difficulty in applying the above principles to numerical examples, and they will find it to their advantage to render themselves perfectly familiar with the process of construction also.

But in order that nothing may be wanting to render the subject as plain and intelligible as possible, we think proper to adduce the following example, in reference to a case of actual construction.

A cylindrical story post of cast iron, 8 feet long and 4 inches in diameter, was calculated to sustain a pressure of 16 tons, but when placed under a building, and subjected to that strain, it was found to deflect or bend in the middle very nearly an inch; and in order to avoid danger, it has to be replaced by another column of the same weight, but cast hollow, with a thickness of one inch of metal; now the question is, what ought to be the diameters of the hollow column?

The diameter of a cylindrical column sufficient to bear a load of 16 tons with safety, ought in the first place to be 4·18 inches, as calculated by the formula.

$$2390 \cdot 5d^4 - d^2w = 0 \cdot 045l^2w;^*$$

where $d$ is the diameter in inches, $l$ the length in feet, and $w$ the load in pounds avoirdupoise. But taking the diameter at 4 inches, as originally cast, the area of section, or the circle KLM, will then be $\frac{1}{4}\pi d^2 = 0 \cdot 7854 \times 4^2 = 12 \cdot 5664$ square inches; and this is the number of inches that must be in the annulus of the hollow column. Now, PN=1 inch and PK=2 inches; therefore, by the property of the circle, we get

$$PV + AV = \frac{PK^2}{PN};$$ that is, $PV + AV = \frac{4}{1} = 4$;

hence it is PV+AV+PN=4+1=5 inches for the diameter of the outer circle, and 5—2 =3 inches for the diameter of the inner one. And with these dimensions, the load which the column will sustain with safety is 19½ tons; for the strength of a solid column at 3 inches is 7·28 tons, and at 5 inches it is 23·92 tons; but 5 : 3 : : 7·28 : 4·37; hence we have 23·92 —4·37=19·55 tons. T.

* This is the formula investigated by Mr. Tredgold, on the supposition that the direction of the straining-force coincides with the surface of the column.

## WESTMINSTER COURT OF SEWERS.

AT a court, held Friday, the 15th instant, Mr. Leslie in the chair, payments were made to the extent of 411*l.* 6s. 4d., the greatest part being for wages to the labourers and artisans employed in cleansing the sewers, cleansing and making new gullies. The Thames Embankment Bill was referred to the officers and solicitors of the court, who were to obtain an interview with the Commissioners of Woods and Forests, to procure the insertion of several clauses, protective of the public interest. Petitions were presented to the court for 7,954 feet of new sewers, and 780 house drains; the greater portion was granted, the remainder to await the special reports of the surveyor.

At two o'clock, pursuant to notice, Mr. Thomas Leverton Donaldson moved, and Mr. Knight seconded, the following:—"That the appointment of Thomas Rowe, as clerk of the works at the meeting of the court held on Friday, the 17th April last, without previous examination by the commissioners, was null and void, being contrary to the practice of the court, and contrary also to the laws of the court (No. 20), no previous notice having been given in the ordinary summons, stating the name of the office, and of the candidate or candidates for such office, &c." Mr. Donaldson's argument in support of his motion was, that the appointment of the new clerk of the works was much at variance with the rules and regulations of the court, and a violation of the privileges of the commissioners. In making the motion he wished to put himself right with the court, as it was only from a sense of duty that he did so, and not to prevent the due dispatch of public business, or from any factious motive whatever. The affair appeared thus on the minutes of the court, 17th of March last:—After public advertisements for candidates, the court assembled to judge of the respective claims, and twelve claimants presented themselves. After four hours' examination, the court resolved, that not one of the candidates was competent to the duties of the office; and Mr. Phillips, the surveyor, was ordered to look out for a proper person, and submit his report to the court. Now he (Mr. D.) complained that the surveyor had not carried out the instructions of the court; he had not reported the name and qualifications of the individual, but the court at once appointed Mr. Rowe for twelve months certain. He had another ground of complaint: a Mr. Knight, who had been examined by the court in April, 1845, and passed the examination satisfactorily, but was unsuccessful on the day of election, had written to the surveyor, and this ought to have been reported to the court.

The surveyor stated, that he had had applications from several parties, but he thought it better to recommend to the court, in the emergency, an individual of whose abilities he had a knowledge than an entire stranger to him.

Mr. Cumberlege moved, and Mr. Le Breton seconded, the following amendment to Mr. Donaldson's motion:—"That in order to remove any doubts as to the regularity of the election or appointment of Thomas Rowe, as a clerk of the works, notice be given in the ordinary summons for the next court, in which shall be stated the name of the said Thomas Rowe, as the candidate for the office of fourth clerk of the works, and that the election or appointment shall take place on Friday, the 5th day of June, between the hours of two and three o'clock.

The chairman begged to direct the attention of the court to the circumstances out of which the question had arisen. A clerk of the works being required, the court ordered that advertisements should be inserted in the usual public journals. On the appointed day twelve candidates presented themselves, among whom was one who, in an examination in the year 1836, was reported as competent to the then vacant office of surveyor. But in the examination of 1846, the whole twelve were, after a four hours' inquiry, declared incompetent to the duties the court expected from their clerks of the works. In this emergency, so unexpected, the court ordered the surveyor to try and find a competent person; and as far as he (the chairman) could judge, he had been fortunate, for the public interests, in the selection he had made. It appeared then, that Mr. Rowe, being in a good and permanent situation with the Messrs. Rigby, would not give that up without the prospect of some lengthened engagement with the commissioners, and the court at once, after having failed by public advertisement, secured Mr. Rowe's service for twelve months.

The amendment was then put, and carried by fifteen to one.

During the sitting of the court, orders were passed that notices be inserted in the daily journals, and in THE BUILDER, intimating that the court had approved a plan whereby an efficient drainage at a very moderate cost may be obtained for courts and alleys, and other confined localities, abutting on streets where there are sewers; and that the plans and sections may be seen at the office of the commissioners. It was also ordered, that the report of the surveyor, to which the preceding order refers, together with the plans and sections for the drainage of courts and alleys, be transmitted to the several vestries and paving boards within the jurisdiction of the commission, and that the attention of the vestries and paving boards, be directed to the 57 Geo. 3, cap. 29, clause 56.

## LICHENS ON STONE BUILDINGS.

SIR,—In reply to your correspondent, Mr. Frank Tyrrell, as to some process for removing lichen on sand-stone structures, I beg to suggest to him the employment of a solution of white oxide of arsenic (the common arsenic of commerce) in soft water. This being destructive to vegetable life, will not only kill any lichen already formed, but prevent its recurrence. I have said solution, meaning thereby a real *chemical* transparent solution, not a *mechanical* mixture; and it should be understood, that arsenic, being very difficult of solution, a few pounds would make many gallons of a saturated solution.

As to the application of this solution, I conceive that it should be floated over the faces of the stones before they be laid in their due courses.—I am, Sir, &c., W. BROMET.

WALTHAM ABBEY.—At the last meeting of the British Archæological Society, on the 20th inst., Mr. Croker read a letter from Mr. Chaffers, describing that gentleman's visit to Waltham Abbey, to examine mural paintings said to have been discovered in the church. Just enough had been brought to light to shew, that interesting paintings lay concealed under the white-wash; but the church-wardens have given strict orders that no more white-wash shall be removed. Mr. Chaffers then gave an account of some of the ancient houses for which this place is remarkable.

PRICE OF GAS.—The directors of the Brighton Company have announced, that from the 24th day of June, 1846, up to the 24th of June, 1847, the price, by meter, will be reduced from 9s. to 7s. per 1,000 cubic feet net; and from the 24th day of June, 1847, the price will be further reduced to 6s. per 1,000 cubic feet.

## JOINT PAROCHIAL CEMETERIES.

Sir,—The Roman maxim, "*In Urbe ne sepelito*," and the melancholy abuses too long existent, are at last fully recognized. Whether, in the amazing changes now occurring in society, any parochial distinction would be desirable in new cemeteries, may be a doubtful point. There may be, however, many who would like to be buried not only "with the bones of their father and their mother," and their kindred, but also with their neighbours; and when they go out of the city would like, as it were, to take their parish churchyard with them. And such feelings are, at any rate, historical and respectable. Such, therefore, may be pleased to examine the following plan.

Although I have not the slightest *authority* to mention such a great name as the Bishop of London's, yet, being fully satisfied of his honourable candour, I will boldly mention, *meo periculo*, that when it was submitted to him (by letter), with a rude sketch, about five years ago, his lordship was pleased to say, that "it was by far the best he had yet seen."

Let any number of parishes, according to their united population—say 10 with 150,000, which with some little divergence is nearly the case between Farringdon-street and Charing-cross,—make a "junction" for the purpose of obtaining a *country burying-ground*. The relative size must depend on others, and partly on circumstances. Certainly it *ought* not to be *less* than an acre for every 5,000*—then we should be inferior to Paris. The whole enclosed with a good wall, eight feet high. The partitions between each allotment might be dwarf iron fences, mounted on brickwork; at the entrances of these might be small pillars—"Στηλαι." Whilst the outward form would be best of an oblong description, the lines might diverge from a centre, enclosing unequal spaces, according to the several populations. Thus, if St. Paul's, Covent-garden (6,000), and St. Andrew's, Holborn (40,000), were in the same "junction," of course they would require a very different tract of land. In the centre a considerable open space—say 150 feet diameter—the whole of which, covered with gravel, might be vaulted over: in the middle of which the chapel. A carriage-way, with foot-paths and flower-borders, from the gate to the centre.† The chapel cruci-form—say four arms, each 25 feet by 20, and 27 feet or upwards high with a tower in the centre, containing a bell. The architecture, of course, might be either "Gothic" or "Roman." In this instance I should decidedly recommend the latter. It would be more cheerful, and better suited to this mode of burial, which has both classicality and early Christianity on its side. A good effect would be produced by having the piers of the tower flat, with bold, enriched, and modillioned arches, resting on solid corbels.

The finest example of similar ribs in England is in the ceiling of the chancel of *Woburn Church*, Bedfordshire, designed by Sir William Chambers.

In the entrance arm of the cross (or nave) a reading desk. In the opposite one, a gallery containing a small organ. Four or six choristers to be maintained; which item to be included in the general fee. Under the tower, in the centre, a large square slab of grey dove marble, raised on Purbeck stone, about three feet high, which might receive four or five coffins at once, if necessary. The other two arms to be handsomely fenced off for monuments, though they might be opened for standing-room on any particular occasion. A chandelier and branches of brass or cut glass, for wax candles, when required. The chapel to be paved with Rockhill or other stone, if marble be too expensive.

Of course, the fair interests of the clergy would be as safe under this as any other plan, with compensation. It would be far better for the chapel service to be always performed over the bodies of paupers, then equal in the hands of their God; which would remedy a cruel distinction. *Two* chapels would break the unity of design here. However, if this, being consecrated, could not be used, at certain times, for any other services besides those of the Church (which is, I believe, sometimes done in Germany) another might be erected near the entrance.—I am, Sir, &c.

J. D. Parry,
Author of the "Coast of Sussex."

London, May, 1846.

* For the *expense*, a shilling or eighteenpenny rate, and that by instalments in six years, might be sufficient.

† Should any of these details appear superfluous or intrusive, they will not in candid and worthy minds affect the main idea.

## VELOCITY OF RUNNING WATER.

Sir,—I enclose a method of solving *approximately* the question proposed by your "Constant Reader."—I am, Sir, &c.,

W.

It has been found by experiment, that the velocity of water flowing uniformly in a straight inclined pipe, is nearly as $\sqrt{\frac{DH}{L}}$, in which expression D is the diameter, H the height of the fall, and L the length—all in feet. The quantity that it would discharge, therefore, in a given time, is as $D^2\sqrt{\frac{DH}{L}}$.

Assuming that the reservoir is just deep enough to keep the first length of pipe (D) always full, that is, just covering the orifice, the second pipe ($d$) should be capable of discharging the same quantity as the first; whence, $d^2\sqrt{\frac{dh}{l}} = D^2\sqrt{\frac{DH}{L}}$, and

$$d = \left(\frac{D^5 H l}{hL}\right)^{\frac{1}{5}}$$

This formula applied to the question, gives $d = \left(\frac{\cdot 1^5 6^5 \times 45 \times 1000}{175 \times 2700}\right)^{\frac{1}{5}} = \cdot 10414$ ft. $= 1\frac{1}{4}$ in.

Now, no notice has been taken of the bendings of the pipes; but it is evident, that in the present case the retardation from this cause would be greatest in the two-inch pipe, and, therefore, the diameter (viz., $1\frac{1}{4}$ inch) determined above for the other is somewhat in excess.

W.

*** The above is not exactly a solution of the question proposed in The Builder; it is merely a method of determining approximately the diameter of a pipe of a given length and declivity, which shall discharge as much water as another pipe, of which the diameter, length, and declivity are known, on the supposition that the pipe is straight. It may, however, be useful as a formula for resolving, approximately, cases to which it is applicable, such as that which the writer has assumed.

## METROPOLITAN BUILDINGS BILL.

Mr. Hawes inquired, in the House of Commons, on the 22nd inst., when the amended bill would be introduced? Sir J. Graham replied, that the act of last session was voluminous and intricate, and it had been found that there was very great difficulty in carrying it into execution. It had been referred to Mr. Hardwick,* and a conveyancer, to consider the doubts and difficulties that had arisen, and it was now proposed to break up the act into four different bills,—one regulating buildings properly so called; the second regulating the office of official referee, and the machinery for carrying the act into execution; the third relating to property adjoining buildings; and the fourth referring to nuisances carried on in the metropolis in buildings. The first two bills would be ready to be introduced next month; the last two were on subjects full of difficulty, and he could not pledge himself that they would be ready so soon. There was, under the existing law, power to revise the fees payable to surveyors, and the government intended to reduce those fees.†

A few days ago a return of 18 folio pages was printed (procured by Mr. Forster, the member for Berwick-on-Tweed), showing the number of informations laid by the surveyors of districts under the Metropolitan Buildings Act. The *Times* gives the following abstract of it: "The informations laid under the Building Act of the 14th George III., c. 78, numbered 50 in 1844-5, and 11 in the present year. The informations laid under the Act 7th and 8th Victoria, c. 84, in 1845 and 1846, were 61 in old districts, and 47 in new districts. The fees awarded by the special referees amounted to 61*l.* 8s. 6d. in old districts, and 29*l.* 18s. 6d. in new districts; and to the office of the Metropolitan Buildings in those districts 301*l.* 2s. 10d., of which 180*l.* 11s. 8d. was in old districts, and 120*l.* 11s. 2d. in new districts. In the year ending the 1st of January last, there were 61 informations laid at the office of Metropolitan Buildings by the surveyors of districts under the 7th and 8th Victoria, being districts under the 14th George III., c. 78, and 47 by the surveyors of new districts in that period under the same Act. The fees awarded by the official referees in the last-mentioned class were 29*l.* 18s. 6d. to district surveyors and 120*l.* 11s. 2d. to the office of Metropolitan Buildings."

* Sir James was in error; the bill has been referred to Mr. Gwilt.

† On inquiry, we find that the fees about to be reduced are those payable at the Metropolitan Buildings Office, not the surveyors' fees.

## THE PROPER RESTORATION OF ANCIENT BUILDINGS.

ELY CATHEDRAL.—THE COLLEGE AT MAIDSTONE.

In reference to a notice, in last week's *Athenæum*, of the works now going on in the west end of the Cathedral of Ely, a correspondent of that journal expresses great fears for the stability of the western tower; and addresses certain statements to it, in the hope that some one connected with the cathedral may be induced to give some satisfactory information on the subject. "The facts," he says, "are these:—the great western tower of Ely is a building of the latter half of the 12th century, resting upon four very lofty pointed arches; the masonry being not of a kind suited for such large and lofty structures, these arches have been a good deal crippled by the superincumbent weight; and when the present 'perpendicular' lantern was placed upon the tower, the architect thought it prudent to strengthen them by very massive piers and arches built within them. The chief part of the present operations consists in cutting away the upper courses of these 'perpendicular' arches, so as to deprive the upper arches of the support which the later ones were intended to afford. The question, therefore, which I should be very glad to see satisfactorily answered, is,—Is this operation unattended by danger? It must be clear to every one who observes how much the southern wing of the west front, and even the great tower itself, have swerved from the perpendicular,—who notices the cracks in the arches above alluded to,—or who remarks that the northern wing of the front has fallen—that the whole of this work requires additional support, and by no means that it should be deprived of any which it now has. I was informed that the works now carrying on are not under the superintendence of any professional architect. Can this be prudent in a case like this, which surely requires knowledge that a practical architect is alone likely to possess."

One of the archæological societies ought at once to institute inquiries into the subject. Our cathedrals b long to the world, and should be carefully tended.

The same journal, referring to the conversion of the venerable college on the Medway, at Maidstone, to an agricultural institution, has the following remarks as to the repairs and alterations in progress:—"It pleases us to think that so fine a feature of this clean and lively town, is to be saved from absolute ruin. But we would rather have the ruins than some barbarous modern antique. The changes which are projected require a skilful architect so to conduct them that they shall not spoil the character and sentiment of the building. We almost doubt if due knowledge and judgment be supervising the business. When we explored the works, we found the hall, which is of noble height and dimensions, about being divided by a brick wall. Perhaps the wants of the institution may require this to be done; but we cannot imagine any reason which should warrant the architect in putting up a modern *flat plaster ceiling*, and thus hiding the tie beams and wood work of the high-pitched roof. We trust no such barbarism is contemplated. If any one wish to see what a frightful effect a modern plastered ceiling has in an old Gothic building, he has only to cross the bridge adjoining this college, and go to the Old Pilgrim's Chapel, changed some years since from a barn into a church. The restorations in this church may have been tolerable before the spirit of mediæval architecture was as well felt

and understood as it is at present; but now they would be regarded as detestable—ruinous to any architect who should perpetrate them. We hope the Agricultural Society will keep St. Peter's Church as warning before them; and will, if they have conceived such an abomination as we have hinted at, renounce it forthwith, seeking the advice of some of our architects who feel the character of our forefathers' buildings, as to what should be done to preserve with consistency this college, which is really one of the best features of Maidstone. The town is disgraced if it be spoilt."

## Correspondence.

### ARCHITECTS' REMUNERATION—GAOL AT BIRMINGHAM.

SIR,—I have perused with pleasure the articles written by you, and letters from able correspondents on the subject of competition, which have from time to time appeared in your journal, and I hope that they may assist in gaining the desired end; but all that may be written and said about the evils of competition will avail little or nothing, unless there be a determination amongst architects themselves to resist every thing approaching to such competition. Why not refuse to reply to advertisements for plans, &c., and the system would be put a stop to immediately?

There may be and are benefits arising from the system, but the evils with which it is accompanied far outweigh the good.

Upon the score of remuneration much has been said, and the case of the building at Luton, referred to by you, was bad enough, but that of the gaol at Birmingham was much worse; and I regret that it was not exposed at the time. The committee of the latter were *not quite* so modest as they of Luton, but advertised for "tenders for making plans, specification, &c., and superintending the work of the proposed borough gaol;" and I am credibly informed, that the architect who is carrying out the work is employed for a remuneration of "*half the usual per centage, and pays clerk of the works!*" No wonder the profession is considered of so little account, when their services may be had so cheaply.

I am, Sir, &c., A LOOKER-ON.
Birmingham, May 19, 1846.

### PRACTICAL QUESTION.

SIR,—The diameter of the main in a certain water-works is 30 inches; but instead of this, it is proposed to distribute the water through seven equal pipes of the same sectional area, when taken together, as the main. Will any of your correspondents give the method of finding the diameter of the smaller pipe geometrically.—I am, Sir, &c. ZERO.

SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES.—The second annual meeting of this society was held in the Hanover-square Rooms on the 22nd instant, Lord Ashley in the chair. A donation of 100*l.* from His Royal Highness Prince Albert was announced, together with an apology for his non-attendance. A report of the progress of the "model lodging house" at Pentonville was read, and the erection of a second in St. Giles's was announced. The society does not appear to be by any means very popular, as the room was not nearly half full, and the proceedings and speeches were cut short by the premature departure of most of those who did attend, and even of the noble chairman himself, the Bishop of Norwich, and many more of the committee.

FINE PICTURE BY MR. HABERZETTEL.—Mr. Haberzettel, a member of the Imperial Academy of St. Petersburgh, has brought to England an historical painting of "St. John the Baptist preaching in the wilderness," and has opened it for exhibition at 213, Piccadilly. It is a work of very high class. Next week we shall speak of it more at length. The size is eighteen feet by fourteen feet.

LARGE WATER COLOUR PAINTING.—One of the largest works in water colours ever attempted, is now being exhibited in Stanley's rooms, Old Bond-street. The subject is the Angel delivering Daniel from the lions; the artist, Mr. James Burbank. The size is twenty feet by twelve feet. It is very highly finished, and well deserves a visit.

## Miscellanea.

REPORT OF THE ROYAL COMMISSIONERS ON THE GAUGE QUESTION.—This Report, if carried out, although enveloped in a kind of official coyness, is nothing less than a decree for abolishing the broad, and establishing the universality of the narrow national uniformity of gauge. The Great Western Company feel this to be the case, and have zealously laboured, ever since the publication of this important document, to destroy its effect. Observations, replies, rejoinders, and sur-rejoinders, daily and weekly articles, and pamphlets, have swarmed from the modern *ultima ratio* of disputants—THE PRESS. Many ingenious arguments, much wit, some ill-humour, and spirit of partizanship of the bitterest character, has been exhibited on both sides. We have even seen a Directorate, including a Conservative peer and a Conservative commoner, patronizing attacks imputing ignorance and partiality to the Queen's own arbitrators. Under these circumstances, it is quite evident that that large body of the public, who, not holding shares in either gauges, and not allied by blood, friendship, patronage, or gentility, with either of the belligerent directing powers, but selfishly, only anxious to have themselves, their goods, chattels, merchandise, and manufactures, conveyed to and from every part of the kingdom, with the greatest possible convenience, comfort, safety, speed, and punctuality, at the lowest possible cost, will treat with great indifference, if not suspicion, the vehement assertions and hypothetical statements of both the broad and narrow houses. To supply, in a somewhat condensed form, the opinions, facts, and figures rendered before the commissioners by the more remarkable of the forty-seven engineers, engine-makers, railway managers, carriers, miners, and railway contractors, this volume has been prepared from the vast blue folio in which their evidence at present lies entombed.—*The Railway System Illustrated.*

AN IRON SKEW BRIDGE.—A very bold and ingenious specimen of a skew bridge, says the *Mechanics' Magazine*, is now erecting on the line of the North British Railway, at the south foot of the Calton-hill, Edinburgh. It consists of six strong beams of cast iron, each composed of four or five pieces joined with rivets, and cast in the form of an arch. They are about 80 feet long; the roadway from wall to wall is 26 feet broad, and has a narrow foot-path on each side, at the outer edge of which cast iron columns are placed, supporting the beams at 10 or 12 feet from either extremity. The beams rest on their ends on solid masonry, and fastened to each other by strong wrought-iron bars running across them at right angles. The angle of the skew—assuming the clear space, from wall to wall, along the beam to be 74, which we believe is very near the truth, and the actual breadth of the road and foot-path being 26 feet—it follows that the obliquity, or the angle of the skew, is 20° degrees.

EVILS OF BAD DRAINAGE.—It has been shewn, almost beyond question, that the numerous deaths in Hull by typhus fever, are mainly owing to the imperfect cleansing and drainage of the place. Dr. W. Pettigrew, in a letter on an apprehended visitation of cholera, in London, says: "Defective ventilation, insufficient supply of water, bad drainage, open or untrapped gully-holes, cess-pools, and an unhealthy condition of the courts, alleys, and small streets, are sure to give rise to fever." Dr. Guy remarks, that fever "makes itself at home in the neighbourhood of cess-pools, and badly-constructed drains, and takes an especial delight in the incense of gully-holes. It has a perfect horror of fresh air, soap, and whitewash, but when left to itself will linger for years amid scenes of filth and corruption, and fold in its deadly embrace all human beings who have the same depraved taste, or are so unfortunate as to be thrown into its company. It is the favourite child of *laissez faire* (in plain English, *let alone*), and bears the same relation to *filth* as crime does to *ignorance*."

BATHS AND WASH-HOUSES FOR THE POOR.—The London Committee have petitioned Parliament to empower boroughs and towns to establish institutions similar to that in Glasshouse-yard, and to limit the rates of charge. The latter establishment is said to be in a thriving condition.

A HINT TO EMPLOYERS.—A gentleman entertaining humane and considerate views, was some years ago, appointed superintendent of a large manufactory in England. In this establishment he soon had occasion to observe that a certain number of workmen were regular in attendance, steady, and economical; while the others were of contrary habits, unsteady, uneconomical, great drinkers, and with families in wretchedness. This had been the case for a long course of years, and nobody about the works thought of inquiring into the cause of the phenomenon. The new superintendent was not one of those persons who never inquire into any thing, and let the world go on in its own old way. As soon as he observed the curious difference, he did not rest till he had discovered the cause of it. On inquiry, he found that all the steady men got a fixed or regular weekly wage, and that all the unsteady ones, though receiving a larger revenue in the aggregate, got it in lumps at irregular intervals, just as they happened to be employed on a particular kind of work. To know the cause of the evil was to set about eradicating it. With the consent of the unsteady hands, he began the practice of paying them every week a certain fixed sum, whether they had earned it or not, carrying forward the balance, if any, to their credit; the accumulated balances to be paid quarterly. The effect of this arrangement, it is said, was marvellous. Very soon the unsteady became as steady as the other members of the establishment. Their wives and families were better dressed; their homes became comfortable; and by-and-by several of these men saved so much money as to be able to buy houses—actually became proprietors, and drew rents like other landlords. Nor were they ungrateful to the person who had thus put them in the way of well-doing. They looked upon him as a general benefactor. A few years ago, when visiting the place, and calling on one of the parties, both husband and wife looked round their cheerful dwelling, and said to him, "All this we owe to you."—*Chambers's Journal.*

ARCHÆOLOGICAL DISCOVERY AT DOVER.—The workmen, in clearing the ground for the erection of some new houses in the Priory grounds, have developed three of the lower arches of a church or chapel; one only of these was perfect when opened, but we regret to learn that it was displaced by a fall of the earth adjoining. The whole is of the Norman style, and built of Caen stone. The floor was paved with glazed tiles of the period, many of which are in good preservation; under the tiles was turned up a structure of burnt wood, which seems to shew that a chapel standing on the same site had been destroyed by fire.—*Dover Telegraph.*

SCAFFOLDING IN ST. PAUL'S.—The interesting meeting of the charity children of the metropolis will take place at the cathedral of St. Paul, on Thursday, the 4th June, when many distinguished visitors are expected to attend, as well as foreigners. The scaffolding for the accommodation of 5,000 children and 7,000 or 8,000 visitors, is superintended by Mr. Newman, the honorary architect to the society of patrons of the anniversary meeting of the charity children. This splendid exhibition of Christian benevolence is not to be witnessed in any other part of the world.

ENCOURAGEMENT TO LANDED PROPRIETORS TO PLANT LARCH AND SCOTS FIR.—The wood at Pitscottie brought the large sum of 5,500*l.*; and, with that part sold about three years ago for 700*l.*, makes the sum total received for 138 imperial acres, 6,200*l.* Besides this, the thinnings have for these last twenty years, on an average, brought 60*l.* per annum. This wood was planted in 1793, by the late Mr. Thomas, of Rumgay, on that part of Ceres Muir which became his property on the division of that commonty, and was valued at that period at 4*s.* per acre of annual rent.

THE CITY OF LONDON NATIONAL SCHOOLS.—The bankers, merchants, and other principal persons in the city, have, it appears, contributed 5,200*l.* within the last few months, towards the erection of six new school rooms with houses for masters and mistresses attached.

ARCHITECTURAL CONGRESS.—Rumours have reached us of an arrangement, that architects from all parts of the world will hold a general congress of architects every three years, the first to take place at Athens. The scheme is somewhat visionary.

## MEETINGS OF SCIENTIFIC BODIES

*During the ensuing Week.*

TUESDAY, June 2.—Linnæan, Soho-square, 8 P.M.

WEDNESDAY, 3.—Geological, Somerset House, 8½ P.M.; British Archæological Association, Western Literary Institution, Leicester-square, 8½ P.M.

FRIDAY, 5.—Royal Institution, Albemarle-street, 8½ P.M.

SATURDAY, 6.—Asiatic, 14, Grafton-street, 2 P.M.

## TENDERS.

For the erection of new school at Camberwell, for the Rev. D. Moore; Mr. Frances, architect.—May 22, 1846.

| | |
|---|---|
| Lurting | £2,499 |
| Kempster | 2,473 |
| Hayward and Nixon | 2,434 |
| Myers | 2,425 |
| Jay | 2,379 |
| Bird | 2,373 |
| Piper | 2,352 |
| Cooper | 2,290 |
| Gerry | 2,169 |
| Curtis | 2,144 |

## NOTICES OF CONTRACTS.

[We are compelled, by the interference of the Stamp Office, to omit the names of the parties to whom tenders, &c. are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent Garden.]

For the several branches of artificer's work, ironmongery, cast-iron, and metal work required in the Ordnance department at Portsmouth, including Portsea Island, at Gosport, and detached works, not exceeding five miles, at Marchwood, Hurst Castle, and Calshot Castle, at Southampton (the barrack buildings, now used as the Ordnance Map Office); and at Winchester, Christchurch, Chichester, Littlehampton, and Isle of Wight; including repairs to the several barracks (excepting those of the Royal Marines) upon a contract for 2½ years from July 1.

For the artificer's work, ironmongery, cast-iron, and metal work required in the Ordnance department at Brighton, Shoreham to Eastbourne, and Eastbourne to Fairlight (separate tenders).

For the restoration and reseatment of the church of Marnham-upon-Trent.

For lighting and warming the new workhouse of the Clifton union, Bristol, and for a cooking apparatus to supply about 1,200 persons.

For the erection of a British school at Romsey, Southampton.

For the erection of a wood saw-mill and machinery, boiler, frames, &c., at or near Liverpool.

For the erection of a school in Durham.

For the execution of capitals for 32 Corinthian columns and 30 pilasters, for the proposed Huddersfield and Manchester Railway station at Huddersfield.

For the erection of the Royal Naval and Military Free Schools, King-street, Devonport.

For the execution of certain tanks, tunnels, filters, beds, and other works connected with the Coventry Water-works.

For the making of a bank near the Severn, in the parish of Slimbridge, county of Gloucester.

For 40,000 railway sleepers for the Edinburgh and Northern Railway Company.

For rebuilding the Wesleyan Chapel, Donegal-square East, Belfast.

For plastering the Wesleyan Chapel at Swansea.

For lighting with gas the public lamps in Canterbury for 21 years, from 29th September next.

For the excavation, brickwork, &c. of a tank, 60 feet in diameter, at the Gloucester Gas Works.

For the repewing of the parish church of Great Wilbraham, county of Cambridge.

For the erection of the new Museum and Scientific Institution at Wisbech.

For 490,000 railway sleepers for the Great Southern and Western Irish Railway Company.

For repairing a foot-path with Marston stones, and taking up pebbles in Bishop-street, Coventry.

For the works required to be done in the erection of the schools and master's house at Little Port, Isle of Ely.

For draining, paving, &c., the streets of Bury.

For a supply of 3,000 tons of railway chairs, deliverable in July and September, to several foundry companies in Scotland.

For the erection of a new manse, with office houses, and garden-wall, in the parish of Unst, Zetland.

For the works of the alterations and improvements of the Dalkeith Railway and its junction with the North British.

For a police-station at Church Stretton, Salop.

For the erection of a new church on Staplefield Common, to be called the Cuckfield Church.

For the supply of 500 cast-iron gully grates for the Commissioners of Sewers for Westminster.

For supplying stone for repairing the footways and for repairing the carriage-ways in the parish of Saint Anne, Westminster, for one year from Midsummer next.

For the supply of 30,000 radiated bricks for the Commissioners of Sewers for Westminster.

For keeping the lanterns and fittings of the several gas-lamps in the parish of St. Mary, Islington, in repair and painting them from Midsummer next to Midsummer, 1847.

For the erection of a new Chapel at Portsea for 1,200 persons.

For building sewers in Clarence-road, Kentish-town, 1,500 feet; the New-road, St. Pancras, 560 feet; Goswell-street-road, 1,030 feet; King Henry's-walk, Islington, 1,150 feet; and Liverpool-road, Islington, and Cumming-street, Pentonville, 910 feet; in five separate tenders.

## APPROACHING SALES OF WOOD, &c.

BY AUCTION.

At Little Orton, parish of Great Orton, near Carlisle: four acres of fir plantation.

At Red hills and Little Stainton Demesne, near Penrith: a large quantity of ash, beech, and sycamore, of large growth and good quality.

At Southam and Co.'s Wharf, Worcester Wharf, Birmingham: 2,000 red deals and battens from Meinel and Wyburg.

At Church Gresley Common: a valuable stock of well-seasoned timber in planks, scantlings, boards, &c.

At Constitutional-hill, Birmingham: a valuable stock of well-seasoned timber.

At the Hill Farm Grove, Ardleigh: a considerable assortment of oak, fir, ash, birch and alder, thatching stuff, &c.

At Harmony Hall, near Broughton and Romsey, Hants: an extensive stock of seasoned building materials, sashes, doors, &c.

At Tiptoe, Norham, North Durham: a quantity of ash, elm, beech, birch, plane, larch, Scots fir and willow, suitable for railway sleepers, roofing, paling, &c.

At Blunt's Park-wood, between Haverhill and Wratting: 107 oak timber trees.

At Moor Hall, in Writtle and Fryerning Hall Farms: 102 oak timber trees and 10 ash.

At Charlton Villa, Kent: the excellent building materials of a portion of Charlton Villa.

At the Clarendon Rooms, South John-street, Liverpool: the lease of Cronllwyn Slate Quarry at Fishguard, Pembrokeshire, with the buildings, &c.

At Gray's Inn Coffee-house, Holborn; the leases, engines, works, &c. of the Aberdare Iron Company, county of Glamorgan, and a wharf at Cardiff.

At the Castle Hotel, Newcastle-under-Lyme, valuable brick and tile works at Basford Bank, Stoke-upon-Trent, Staffordshire Potteries.

At Pettit's Colliery, Monmore-green, near Wolverhampton: a bankrupt estate, comprising two steam-engines, a weighing-machine, wrought-iron rails and plates, cast-iron pumps and pipes, 700 yards of chain, pulleys, &c.

At the Idle Tunnel, on the Bradford and Leeds Railway, near Bradford: seven steam-engines, steam-boilers, winds, pumps, &c.

At Walbottle Colliery, near Newcastle: three pumping engines, with pumps and all other apparatus belonging thereto.

At Glasgow: an immense quantity of building materials, comprising about 300 doors, 200 windows, with slates, lead, flooring, joists, iron pillars, marble jambs, water-closets, gas fittings, &c.

At Crookston, near Fushie Bridge: a large quantity of full grown Scots and larch fir.

At Leith: large quantities of yellow pine, spruce, birch, and deals and battens from St. John.

At Horningsheath, Suffolk: 200 oak trees, with stands and ash poles.

At 123, Oxford-street: a collection of magnificent stained glass windows, ancient and modern.

At Eastgate, Broadway: a quantity of ash, beech, elm, oak, &c.

## TO CORRESPONDENTS.

"*Conversion of Areas.*"—An answer to "Builder" shall appear shortly.

"*G. B.*"—We cannot assist him.

"*Colour for Cement.*"—A correspondent wishes to know what is the best composition for colouring cemented fronts, &c.

*Received.*—"J. A.," "M. W. T.," "Subscriber," "G. M.," "Decorative Art Society."—Other correspondents must excuse us till next week.

*Books, &c., Received.*—Portrait of A. Welby Pugin, architect, painted and engraved by J. R. Herbert, R.A. (Hering and Remington, Regent-street). "An Account of the Religious Houses, formerly situated on the Eastern side of the River Witham, by the Rev. Dr. Oliver." (Spencer, 314, High Holborn). "A Treatise on Railway Surveying and Levelling, by John Quested," author of "The Art of Land Surveying." (Relfe and Fletcher, Cloak-lane). "Drawing of Old Hinges, Brittsbury Church." "View of Pembury Church, Mr. E. N. Stevens, Architect." "The Handbook for Mapping, Engineering, and Architectural Drawing, by B. P. Wilme, Civil Engineer." (Weale, Holborn).


## ADVERTISEMENTS.

BEST PAN WATER-CLOSETS, with Round Valve, complete, 31s. each.
WASHING COPPERS, above 12lb., 1s. 1d. per lb.
COCKS, Bib, Ball, and Stop, ¾-in. 1s. 8d., 1-in. 2s. 4d.
Lifting Force Pumps, 2½-in., 4l. 4s., and every description of Copper and Brass Work equally low, at Messrs. MACGLASHAN & CO., 16, Long Acre, London.

FIRE BRICKS.

W. WARD, Honduras Wharf, Bank-side, and St. Michael's-alley, Cornhill, has just landed a large quantity of his very superior manufactured Fire Bricks, of Stourbridge, Welsh, and Newcastle. Prices very low. Shipments made for the East and West Indies, &c., with the greatest promptness. Gas companies, engineers, builders, and all large consumers supplied from ships in the river at a much lower price. A very large stock on hand of Bricks, Lumps, Tiles, and Clays.
River sand and gravel by freight to any wharf and dock.

PANTECHNICON AND NORTH LONDON DEPOSITORY, GRAY'S-INN-ROAD, KING'S-CROSS.

THE Nobility and Gentry are respectfully informed, during their temporary absence from town, they may have their FURNITURE, Plate Chests, Books, Pictures, and every description of property, carefully removed and warehoused at the above extensive stores. Light and elegant SHOW-ROOMS for the standing and sale of carriages. The building is secure from fire. Parties may have any size rooms. Harness received for sake keeping.—Established 1838.

Railway Surveying, Levelling, Plotting, Computing, use of Theodolite, &c., PRACTICALLY TAUGHT.

THE Advertiser (an Engineering Surveyor of Extensive Practice), is now devoting his time to the instruction of persons for Railway Surveyors, &c., &c., undertaking to make them SELF EVIDENTLY COMPETENT to Survey, Level, Plot, Compute, Determine Heights and Distances, give Curves and Gradients, &c., &c., on all sorts of Ground. Terms Five Guineas; proficiency guaranteed and references given.—Apply, if personally between 5 and 10 P.M., to G. T., 117, Park-street, Camden-town.—N.B. The above imparted in as short a period as possible consistent with a thorough instruction.

By Her Majesty's Royal Letters Patent

BAILLIE'S
PATENT ROUNDED RIM LOCKS.
WITH SECRET AND SECURE FIXINGS.

THIS CHEAP and USEFUL ARTICLE, obviating the unsightly appearance and insecurity of the common rim lock, can be obtained of any respectable ironmonger in town or country, or from the sole manufacturer, Mr. EDWARD WRIGHT, Wolverhampton.

WILSONS PATENT
VENTILATING
SPIRAL CHIMNEY POT,

For the cure of smoky chimneys (manufactured by J. PORTER), is the ONLY article for the purpose which assists the draft of the chimney by an external propelling power. Upwards of fifty were fixed last winter on the chimneys of Buckingham Palace, and Windsor Castle, with great success.

This Chimney-pot is not only the best and most effectual ever invented for the purpose named, but stands unrivalled in its ornamental appearance.

The public may be supplied with the above useful article by any of the respectable ironmongers, or at the sole manufactory,
Southwark-bridge Iron Roofing Works.

DAY'S PATENT WINDGUARD, for ventilating

| | | |
|---|---|---|
| Churches, | Shops, | Kitchens, |
| Hospitals, | Bed-rooms, | Offices, |
| Factories, | Smoking-rooms, | Ships, |
| Theatres, | School-rooms, | Mines, |
| Breweries, | Nurseries, | Vaults, |
| Malt-houses, | Stables, | Tunnels, |
| Club-houses, | Larders, | &c. &c. |

Also for preventing down draft; and is guaranteed to cure all smoky chimneys caused by wind; and entirely supersedes the use of revolving cowls, or any thing moveable or unsightly on the tops of chimneys or ventilators.

The object of this invention is to create a draft where otherwise it would not exist, by the spontaneous action of the external air. The Windguard forms a pleasing octagonal pillar, and by its peculiar construction to carry out the principle on which it is based, which consists of the wind giving a disposition for a vacuum within, thereby causing a continual upward current about equal to the velocity of the wind at the time acting upon it, which averages about six feet per second thirty days out of thirty-one; therefore, will nearly at all times ensure a continual change of air, being no impediment to spontaneous ventilation, even on a perfectly calm day. One five feet square will ventilate a building containing upwards of 1,000 persons. The Windguard applied to ships and steam vessels, in the form of a sky-light, prevents rain or the sea entering within, however boisterous the weather may be, thereby affording excellent ventilation as well as light. The Windguard is simply applied for effectually ventilating bed-rooms, nurseries, smoking-rooms, offices, &c., causing the air of the apartment to be at all times as pleasant as can be desired. It is fixed at the top of the chimney, in addition to which a cast-iron frame and valve (about one foot area), made to open or shut at pleasure, is let into the flue, near the ceiling of the room, to allow the constant ascending vitiated air being immediately carried off. The opening is guarded by a neat venetian blind or grating; and so powerful is the effect on a windy day that if a handkerchief be thrown up to the grating, it will remain there—i. e. if the valve be open. In winter the valve would be only partially open, to allow the smoke from the fire to ascend, but if the room be found too cold, can be entirely closed. The Windguard applied to the tops of chimneys prevents all annoyance from smoke (caused by wind); indeed, where it does not, nothing else applied at top will (of the same size); care, therefore should be taken to have the proper size applied. It is simple in its application, reasonable in price, ornamental in appearance; no machinery or anything moveable in it, therefore, cannot get out of order; free from noise or any unpleasantness whatever; not liable to choke up with soot; no obstacle to the machines used for sweeping chimneys. May be had of all respectable ironmongers in town and country; and may be seen daily in operation, where its powers and usefulness are exhibited by the severest tests, at THE PATENT VENTILATING WORKS, COMMERCIAL-ROAD, PIMLICO, LONDON; where also may be seen Mr. G. T. DAY's plans (illustrating the different applications of his Patent Archimedian Ventilator and his Portable Water Apparatus) for effectually Ventilating, Warming, and Cooling the Air of Buildings, Ships, Mines, &c. &c. By the use of these inventions many thousand cubic feet, or any quantity of pure warm or cold air, can be guaranteed to be continually exchanged per minute, day and night, winter and summer; thereby insuring, at all times, free ventilation to the rooms and passages of buildings, &c. from the basement to the roof, at the same time in such a manner as shall not be inconveniently perceptible. The size of the apparatus depends on the nature and use of the building and its occupants. The Patentee has been honoured by his inventions being applied at the following places:—

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|---|---|
| Windsor Castle, | Trinity House, |
| Buckingham Palace, | Ordnance, |
| Saint James's Palace, | Greenwich Hospital, |
| Claremont Palace, | Christ's Hospital, |
| Walmer Castle | Westminster Hospital, |
| The Houses of Parliament, | Bethlehem Hospital, |
| New Conservative Club, | Surrey Lunatic Asylum, |
| White's Club, | New Royal Exchange, |
| Travellers' Club, | Mansion House, |
| Oxford and Cambridge, | Goldsmiths' Hall, |
| Parthenon, | Fishmongers' Hall, |
| Wyndham, | Haberdashers' Hall, |
| Army and Navy, | Dyers' Hall, |
| Senior United Service, | Grocers' Hall, |
| Junior United Service, | Armourers' Hall. |
| Admiralty, | Weigh-house Meeting-house |
| British Museum, | Hanover Square Rooms, |
| Somerset House, | Theatre of the Westminster |
| Custom House, | Literary and Scientific Institution, |
| Mint, | Grand Cigar Divan, Strand, |
| Hon. Artillery Company, | City Club, |
| H. M. S. Salamander, | |

And many other Public Buildings in Town and Country, as well as to the Mansions of many Noblemen and Gentlemen. Licenses granted for Manufacturing the above.

Drawings and Plans made for Ventilating and Warming Buildings of every description.

CAEN STONE.

LUARD and BEEDHAM have a quantity of the above stone, of the best quality, direct from their Quarries at Allemange, which may be inspected at the Norway Sufferance Wharf, Greenwich.—Further particulars at Mr. G. GATES', 12, SOUTHWARK-SQUARE, SOUTHWARK.

MARBLE CHIMNEY PIECES.—The WESTMINSTER MARBLE COMPANY have this spring, restocked their show-rooms with a great variety of chimney-pieces of quite a new design, with the best quality of Italian Marbles selected expressly for their works, and will be sold to builders at such reduced prices that they will realize a great saving by forwarding their orders to the Westminster Marble Works. An unabated zeal will be maintained to continue the patronage so liberally shown to this Establishment.—Address, Earl-street, Millbank.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.

SAMUEL CUNDY begs to inform Architects, &c., that every description of Stone, Marble, and Granite work is executed at the cheapest possible rate.

Estimates given for Mason's Work in all its branches. Gothic Work, Tombs, Monuments, &c.

MARBLE WORK for Halls, Dairies, Tables, Columns, Vases, at most reasonable prices.

A large collection of Designs for Mural and other Monuments.

CHIMNEY PIECES from Twelve Shillings upwards.

Depôt for CAEN STONE, &c.

CLIFF AND HUSLER, STONE AND TILE MERCHANTS, Victoria Stone-wharf, Isle of Dogs.

JOHN TRICKETT, Agent, respectfully calls the attention of masons, stone-merchants, contractors, and builders, to his large stock of STONE and TILES on the above Wharf. Portland stone of large dimensions selected at the Quarries, and arrivals every week of Yorkshire stone in billy-buoys, which can discharge their cargoes above or below bridges, in lots from 20 tons at wholesale prices in the river. Special orders to dimensions for Landings, Bramley Fall, Harehills, and other stone, fulfilled in two or three weeks, shipped direct to any wharf, or to order for barges. Tooled and self-faced paving always alongside or in stock on the Wharf. A very fine stock (some of very large dimensions) of York Landings on hand. Pan, plain, and paving tiles, fire-bricks, and clay, at wholesale prices; vein marble in slab, and sawn Robin Hood, Greenmoor, and Harehill slab and head-stones; sawn Portland Landings, &c.

SIR WILLIAM BURNETT'S PATENT for the Preservation of Timber, Canvas, Cordage, Cotton, Woollen, &c., from Decay.

TESTIMONIALS.

From THOMAS GRAHAM, Esq., M.A., F.R.S., L. and E., Professor of Chemistry, University College, London.

"After making several experiments on wood prepared by the solution of chloride of zinc for the purpose of preservation, and given the subject my best consideration, I have come to the following conclusions.

"The wood appears to be fully and deeply penetrated by the metallic salt; I have found it in the centre of a large prepared paving block.

"The salt, although very soluble, does not leave the wood easily when exposed to the weather, or buried in dry or damp earth. It does not come to the surface of the wood by efflorescence, like the crystallisable salts. I have no doubt, indeed, that the greater part of the salts will remain in the wood for years, when employed for railway sleepers or such purposes. This may be of material consequence when the wood is exposed to the attacks of insects, such as the white ant in India, which I believe would be repelled by the poisonous metallic salt.

"After being long macerated in cold water, or even boiled in water, thin chips of the prepared wood retain a sensible quantity of the oxide of zinc; which I confirmed by Mr. Teplis's test, and observing that the wood can be permanently dyed from being charged with a metallic mordant.

"I have no doubt, from repeated observations made during several years, of the valuable preservative qualities of the solution of chloride of zinc, as applied in Sir. W. Burnett's process; and would refer its beneficial action chiefly to the small quantity of the metallic salt which is permanently retained by the ligneous fibre in all circumstances of exposure. The oxide of zinc appears to alter and harden the FIBRE of wood, and destroy the solubility, and prevent the tendency to decomposition of the azotised principles it contains, by entering into chemical combination with them.

(Signed) "THOMAS GRAHAM."

"University College, 25th October, 1845.

From Professors BRANDE and COOPER.

"London, 4th November, 1845.

"SIR,—We have this day again examined the specimens of canvas and wood prepared according to the specification of your patent, and which, in the month of April, 1844, we placed in a damp cellar, where they have remained up to this date.

"We are now enabled satisfactorily to corroborate the favourable opinion expressed in our former report. The canvas remains amply protected from all fungous vegetation and rotteness, while a corresponding sample of the same piece, which had not been prepared by immersion in the solution of chloride of zinc, is entirely decayed, being mouldy, rotten, black, and in places resembles timber.

"We have also lately compared the strength of a fibre of a piece of canvas which we prepared according to your specification, in October, 1844, with that of the fibre of the same canvas, unprepared, and find that it has in that respect sustained no injury. We are therefore of opinion that your process will not, after any lapse of time, tend to deteriorate the strength of the fibres of the substances in question.

"In regard to the several samples of different species of wood above adverted to, each of which was cut into two, one half being imbued according to the directions of your specification with the dilute solution of chloride of zinc, while the other half was left in its original condition, we have also to make a favourable report, and to repeat our opinion of the efficacy of your process as a preventive of dry rot, and similar sources of decay; the unprepared specimens are manifesting symptoms of decay and mildew, while those which have been protected by your preparation are clean and sound.—(Signed) "WILLIAM THOMAS BRANDE,

"JOHN THOMAS COOPER."

"To Sir William Burnett, K.C.H., F.R.S., &c. &c."

Testimonials from numerous other parties may be obtained on application, personally or by letter, to the Secretary, and Specimens may be seen at the Office, 59, King William-street, London-bridge.

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JOHNS and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask in any Climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

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Patentees and manufacturers, J. B. WHITE & SONS, Millbank-street, Westminster,

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

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For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.

For the floors of hall and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.

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